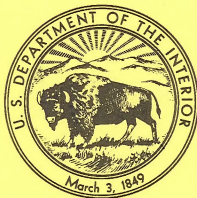




FINAL
ENVIRONMENTAL STATEMENT
FOR THE
PROTOTYPE OIL SHALE LEASING PROGRAM

Volume VI of VI

**Public Hearings Held During
the Review Process**



U.S. DEPARTMENT OF THE INTERIOR

1973



880/6632

F I N A L

ENVIRONMENTAL STATEMENT

FOR THE

PROTOTYPE OIL-SHALE LEASING PROGRAM

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Volume VI of VI

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Public Hearings

Held During the

Review Process

Prepared in Compliance With

Section 102 (2) (c) of the National Environmental
Policy Act of 1969

Prepared by

UNITED STATES DEPARTMENT OF THE INTERIOR

1973

RECEIVED

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U.S. DEPARTMENT OF AGRICULTURE

WASHINGTON, D.C.

OFFICE OF THE SECRETARY

SUMMARY

Final Environmental Statement Department of the Interior, Office of the Secretary

1. Administrative type of action:

2. Brief description of action:

This action would make available for private development up to six leases of public oil shale lands of not more than 5,120 acres each. Two tracts are located in each of the States of Colorado, Utah, and Wyoming.

Such leases would be sold by competitive bonus bidding and would require the payment to the United States of royalty on production. Additional oil shale leasing would not be considered until development under the proposed program had been satisfactorily evaluated and any additional requirements under the National Environmental Policy Act of 1969 had been fulfilled.

3. Summary of environmental impact and adverse environmental effects:

Oil shale development would produce both direct and indirect changes in the environment of the oil shale region in each of the three States where commercial quantities of oil shale resources exist. Many of the environmental changes would be of local significance, and others would be of an expanding nature and have cumulative impact. These major regional changes will conflict with uses of the other physical resources of the areas involved. Impacts would include those on the land itself, on water resources and air quality, on fish and wildlife habitat, on grazing and agricultural activities, on recreation and aesthetic values, and on the existing social and economic patterns as well as others. The environmental impacts from both prototype development at a level of 250,000 barrels per day of shale oil and an industry producing a possible 1 million barrels per day by 1985 are assessed for their anticipated direct, indirect and cumulative effects.

4. Alternatives considered:

- A. Government development of public oil shale lands.
- B. Change in number and location of tracts to be leased.
- C. Delay in development of public oil shale lands.
- D. No development of public oil shale lands.
- E. Unlimited leasing of public oil shale lands.
- F. Obtaining energy from other sources.

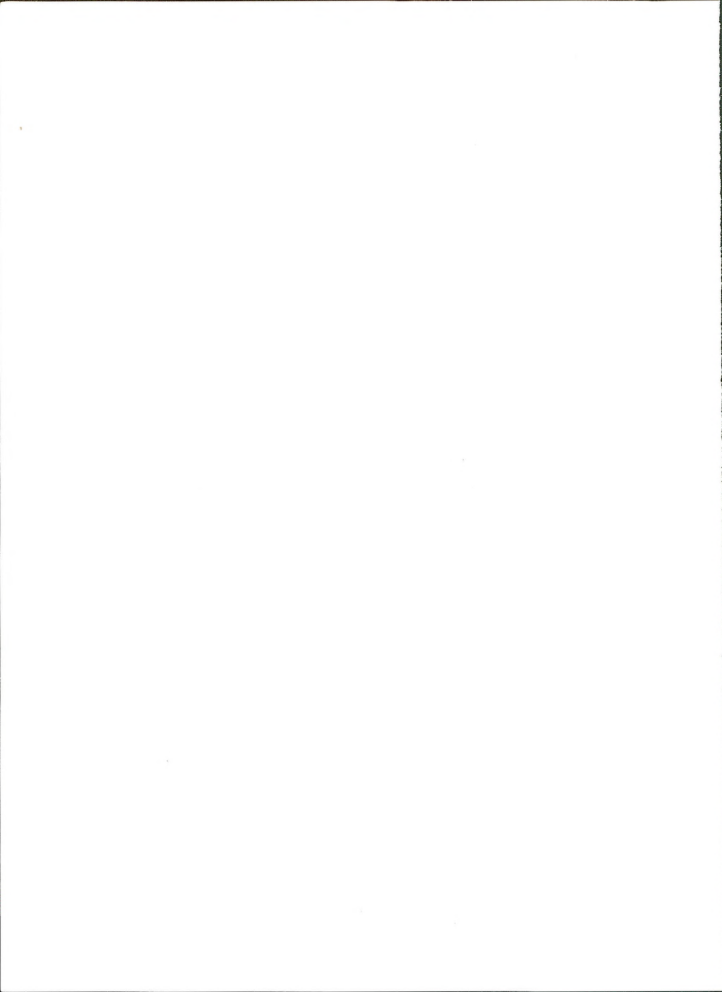
5. Comments have been requested from the following:

Federal agencies, State agencies, and private organizations listed in Volume IV, Section F.

6. Date made available to the Council on Environmental Quality and the Public:

Draft Statement: September 7, 1972

Final Statement:



INTRODUCTORY NOTE

THIS FINAL ENVIRONMENTAL STATEMENT HAS BEEN PREPARED PURSUANT TO SECTION 102 (2) (C) OF THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. SECS. 4321-4347). ITS GENERAL PURPOSE IS A STUDY OF THE ENVIRONMENTAL IMPACTS OF OIL SHALE DEVELOPMENT.

THE SECRETARY OF THE INTERIOR ANNOUNCED PLANS ON JUNE 29, 1971, FOR THIS PROPOSED PROGRAM AND RELEASED A PRELIMINARY ENVIRONMENTAL STATEMENT, A PROGRAM STATEMENT, AND REPORTS PREPARED BY THE STATES OF COLORADO, UTAH, AND WYOMING ON THE ENVIRONMENTAL COSTS AND PROBLEMS OF OIL SHALE DEVELOPMENT.

THE PROPOSED PROGRAM IS IN CONCERT WITH THE PRESIDENT'S ENERGY MESSAGE OF JUNE 4, 1971, IN WHICH HE REQUESTED THE SECRETARY OF THE INTERIOR TO INITIATE "A LEASING PROGRAM TO DEVELOP OUR VAST OIL SHALE RESOURCES, PROVIDED THAT ENVIRONMENTAL QUESTIONS CAN BE SATISFACTORILY RESOLVED."

AS PART OF THE PROGRAM, THE DEPARTMENT AUTHORIZED INFORMATIONAL CORE DRILLING AT VARIOUS SITES IN COLORADO, WYOMING, AND UTAH AND 16 CORE HOLES WERE COMPLETED. THE DEPARTMENT REQUESTED NOMINATIONS OF PROPOSED LEASING TRACTS ON NOVEMBER 2, 1971, AND A TOTAL OF 20 INDIVIDUAL TRACTS OF OIL SHALE LAND WERE NOMINATED. WITH THE CONCURRENCE OF THE CONCERNED STATES, THE DEPARTMENT OF THE INTERIOR ANNOUNCED ON APRIL 25, 1972, THE SELECTION OF SIX OF THESE TRACTS, TWO EACH IN COLORADO, UTAH, AND WYOMING.

THE PROGRAM IS ESSENTIALLY UNCHANGED FROM THAT ANNOUNCED ON JUNE 29, 1971, BUT THE PRELIMINARY STATEMENT ISSUED AT THAT TIME

WAS EXPANDED TO CONSIDER THE IMPACT OF MATURE OIL SHALE DEVELOPMENT, THE IMPACT OF DEVELOPMENT OF THE SIX SPECIFIC TRACTS, AND A COMPREHENSIVE ANALYSIS OF OTHER ENERGY ALTERNATIVES.

THE DRAFT OF THIS FINAL ENVIRONMENTAL STATEMENT WAS RELEASED TO THE PUBLIC ON SEPTEMBER 7, 1972. A PUBLIC REVIEW PERIOD WAS HELD THAT ENDED ON NOVEMBER 7, 1972. THIS REVIEW PROVIDED IMPORTANT INFORMATION UPON WHICH TO EXPAND AND CORRECT, WHERE APPROPRIATE, THE DRAFT MATERIAL.

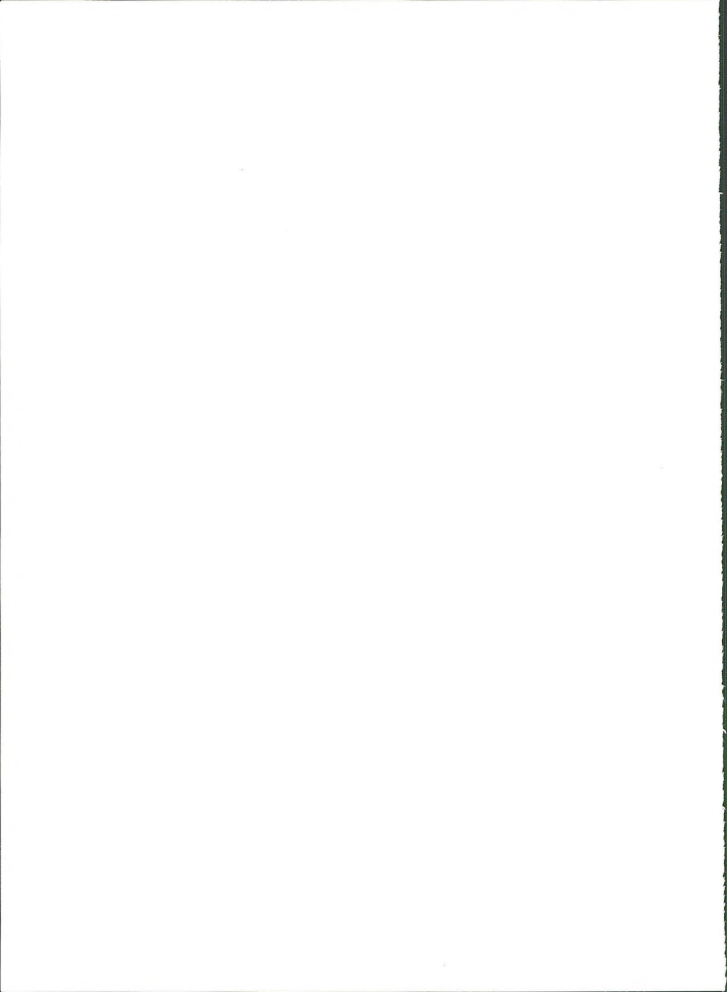
VOLUME I OF THIS FINAL SET OF SIX VOLUMES PROVIDES AN ASSESSMENT OF THE CURRENT STATE OF OIL SHALE TECHNOLOGY AND DESCRIBES THE REGIONAL ENVIRONMENTAL IMPACT OF OIL SHALE DEVELOPMENT AT A RATE OF ONE MILLION BARRELS PER DAY BY 1985. VOLUME II EXTENDS THIS STUDY WITH AN EXAMINATION OF ALTERNATIVES TO THE ONE MILLION BARREL PER DAY LEVEL OF SHALE OIL PRODUCTION. VOLUMES I AND II THUS CONSIDER THE REGIONAL AND CUMULATIVE ASPECTS OF A MATURE OIL SHALE INDUSTRY.

VOLUME III EXAMINES THE SPECIFIC ACTION UNDER CONSIDERATION, WHICH IS THE ISSUANCE OF NOT MORE THAN TWO PROTOTYPE OIL SHALE LEASES IN EACH OF THE THREE STATES OF COLORADO, UTAH, AND WYOMING. ITS FOCUS IS ON THE SPECIFIC ENVIRONMENTAL IMPACTS OF PROTOTYPE DEVELOPMENT ON PUBLIC LANDS WHICH, WHEN COMBINED, COULD SUPPORT A PRODUCTION POTENTIAL OF ABOUT 250,000 BARRELS PER DAY.

VOLUME IV DESCRIBES THE CONSULTATION AND COORDINATION WITH OTHERS IN THE PREPARATION OF THE FINAL STATEMENT, INCLUDING COMMENTS RECEIVED AND THE DEPARTMENT'S RESPONSES. LETTERS RECEIVED DURING THE REVIEW PROCESS ARE REPRODUCED IN VOLUME V, AND ORAL TESTIMONY IS CONTAINED IN VOLUME VI.

THIS DOCUMENT IS BASED ON MANY SOURCES OF INFORMATION, INCLUDING RESEARCH DATA AND PILOT PROGRAMS DEVELOPED BY BOTH THE GOVERNMENT AND PRIVATE INDUSTRY OVER THE PAST 30 YEARS. MANY FACTORS, SUCH AS CHANGING TECHNOLOGY, EVENTUAL OIL PRODUCTION LEVELS, AND ATTENDANT REGIONAL POPULATION INCREASES ARE NOT PRECISELY PREDICTABLE. THE IMPACT ANALYSIS INCLUDED HEREIN IS CONSIDERED TO CONSTITUTE A REASONABLE TREATMENT OF THE POTENTIAL REGIONAL AND SPECIFIC ENVIRONMENTAL EFFECTS THAT WOULD BE ASSOCIATED WITH OIL SHALE DEVELOPMENT.

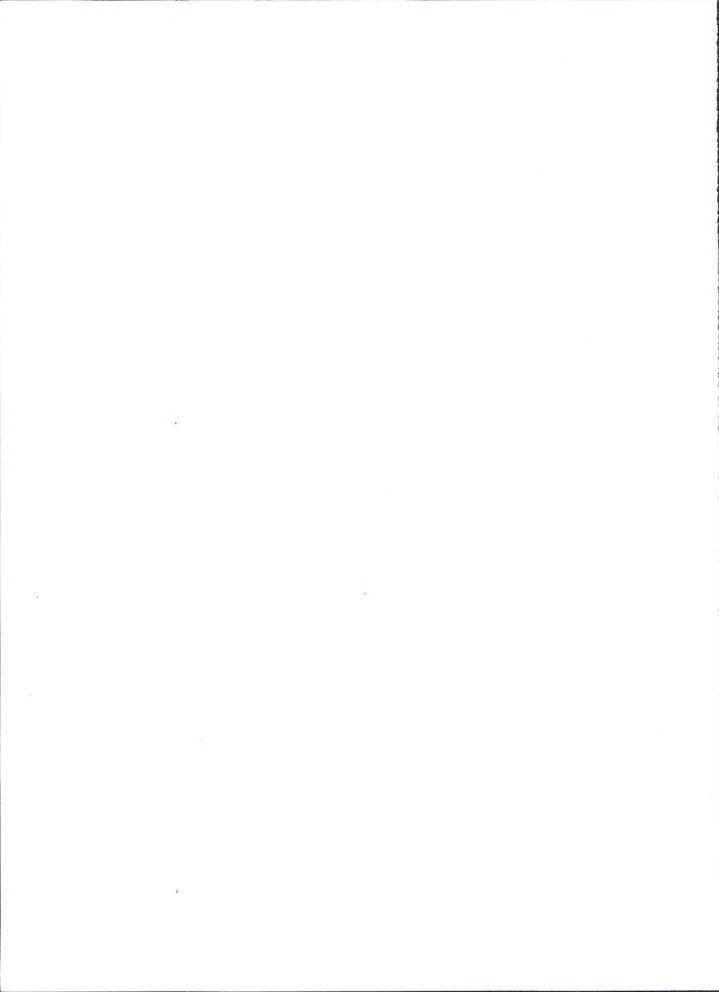
IT SHOULD BE NOTED THAT SUBSTANTIAL AMOUNTS OF PUBLIC LANDS IN ADDITION TO THE PROTOTYPE TRACTS WOULD BE REQUIRED FOR AN INDUSTRIAL DEVELOPMENT TO THE ONE MILLION BARREL PER DAY LEVEL CONSIDERED IN VOLUMES I AND II. IF EXPANSION OF THE FEDERAL OIL SHALE LEASING PROGRAM IS CONSIDERED AT SOME FUTURE TIME, THE SECRETARY OF THE INTERIOR WILL CAREFULLY EXAMINE THE ENVIRONMENTAL IMPACT WHICH HAS RESULTED FROM THE PROTOTYPE PROGRAM AND THE PROBABLE IMPACT OF AN EXPANDED PROGRAM. BEFORE ANY FUTURE LEASES ON PUBLIC LANDS ARE ISSUED, AN ENVIRONMENTAL STATEMENT, AS REQUIRED BY THE NATIONAL ENVIRONMENTAL POLICY ACT, WILL BE PREPARED.



AVAILABILITY OF FINAL ENVIRONMENTAL STATEMENT

The six-volume set may be purchased as a complete set or as individual volumes from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402; the Map Information Office, Geological Survey, U.S. Department of the Interior, Washington, D. C. 20240; and the Bureau of Land Management State Offices at the following addresses: Colorado State Bank Building, 1600 Broadway, Denver, Colorado, 80202; Federal Building, 124 South State, Salt Lake City, Utah, 84111; and Joseph C. O'Mahoney Federal Center, 2120 Capital Avenue, Cheyenne, Wyoming, 82001.

Inspection copies are available in the Library and the Office of the Oil Shale Coordinator, U.S. Department of the Interior, Washington, D. C., and at depository libraries located throughout the Nation. The Superintendent of Documents may be consulted for information regarding the location of such libraries. Inspection copies are also available in Denver, Colorado, in the Office of the Deputy Oil Shale Coordinator, Room 237E, Building 56, Denver Federal Center, Denver, Colorado 80225, in all the Bureau of Land Management State Offices listed above, and in the following Bureau of Land Management district offices: Colorado: Canon City, Craig, Glenwood Springs, Grand Junction, Montrose; Utah: Vernal, Price, Monticello, Kanab, Richfield; Wyoming: Rock Springs, Rawlins, Casper, Lander, Pinedale, Worland.



I. TRANSCRIPTS OF PUBLIC HEARINGS HELD

The Draft Environmental Statement for the Proposed Prototype Oil-Shale Leasing Program was released by the Department of the Interior on September 7, 1972. Notice of availability of the Draft Statement was published in the Federal Register, pages 18098 + 18099, vol. 37, No. 174, Thursday, September 7, 1972. In that same location, a notice was also published announcing that public hearings on the Draft Statement were to be held in the state capitol of the three States involved, Colorado, Wyoming and Utah, and in three cities of those same States near the proposed lease sites. The published notice announced that written comments would be received on the Draft Statement for a period of 45 days (until October 23, 1972) after the publication of the notice. This deadline was later extended by the Secretary of the Interior to November 7, 1972, responding to comments received both in writing and at the public hearing requesting an extension in time.

Testimony was received from 95 individuals at the public hearings held during the week of October 10 to 13, 1972. Transcripts of this testimony comprises 450 pages. In addition to the oral testimony, material was submitted to the Director, Office of Hearings and Appeals, that totaled 388 pages. These materials were designed as "Exhibits" of the particular public hearing at which these were submitted.

All of the written comments and hearings material were systematically indexed by the Department of the Interior and the indexed material was made available to the specialists involved in the preparation of the Final Environmental Statement. Reproduction of all letters received by the Department are contained in Volume V. A list of hearings, exhibits, and other material submitted to the Department are listed in Volume V, Chapter II, Section C. These materials are available for public inspection in the Office of the Oil Shale Coordinator, U.S. Department of the Interior, Washington, D.C. 20240.

The present volume (VI) contains the transcripts of the oral comments received during the six public hearings held during October 1972. Where errors in the transcripts have been brought to the Department's attention, these have been noted in the transcript by the Department.

1 UNITED STATES OF AMERICA
2 DEPARTMENT OF THE INTERIOR
3

4 -----
5 In the Matter of: :

6 DRAFT ENVIRONMENTAL STATEMENT :
7 FOR THE PROPOSED PROTOTYPE :
8 SHALE LEASING PROGRAM. :
9 -----

10 Federal Center Auditorium
11 Denver, Colorado
12 Tuesday, October 10, 1972

13 Met, pursuant to notice, at 9:30 o'clock a.m.

14 BEFORE:

15 JAMES M. DAY, Director, Office of Hearings and
16 Appeals, U. S. Department of the Interior.

17 PANEL MEMBERS:

18 REID STONE, Oil Shale Coordinator.

19 ANDREW DE CORA, Bureau of Mines.

20 ALBERT LEONARD, Bureau of Land Management.

21 KENNETH ROBERTS, Bureau of Sports Fisheries and Wildlife.

22 * * *
23
24
25

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1/ Warner should be Wanner2/ Leopold should be Robert Turner3/ Jeanne P. Foster should be V. Crane Wright

P R O C E E D I N G S

Mr. Day: This hearing will come to order. My name is James M. Day and I am Director of the Office of Hearings and Appeals, United States Department of the Interior.

Sitting on the panel as representatives of the Department are Mr. Reid Stone, Oil Shale Coordinator; Mr. Andrew DeCora, Bureau of Mines; Albert Leonard, Bureau of Land Management; and Mr. Kenneth Roberts, Bureau of Sports Fisheries and Wildlife.

The purpose of this hearing is to receive comments on the Draft Environmental Statement for the Proposed Prototype Oil Shale Leasing Program, pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969.

In accordance with provisions of the National Environmental Policy Act, the draft environmental statement was made available to the Council on Environmental Quality on September 6, 1972, and a Notice of Availability published in the Federal Register on September 7, 1972. This document has been marked as Exhibit 1.

The Office of Hearings and Appeals published a Notice of Public Hearing on the draft environmental statement in the Federal Register on September 7, 1972, scheduling the hearing for today, beginning at 9:30 a.m. Interested parties wishing to appear were advised to contact:

Director, James M. Day
Office of Hearings and Appeals
U. S. Department of the Interior
4015 Wilson Boulevard
Arlington, Virginia 22203

1 An official reporter, Gilda M. Loyd, will make a verbatim
2 transcript on the hearing. All the matter that is spoken while the
3 hearing is in session will be recorded by the reporter. In order to
4 insure a complete and accurate record of the hearing, it is absolutely
5 necessary that only one person speak at one time.

6 While the hearing is in session, no one will be recognized
7 to speak other than the parties who wish to present statements.

8 It should be understood that this is not an adversary
9 proceeding. The participants presenting their views will not be
10 sworn or placed under oath. There will be no examination on
11 interrogation of any of the participants. However, the panel may
12 ask witnesses questions in order to clarify matters brought out in
13 the testimony.

14 The participants will be called in the order shown on the
15 list available at the press table.

16 Although there will be no strict procedural rules, I would
17 like to stress two important points. The first is that the
18 presentations should be relevant and supported by pertinent data.
19 If any comment is directed to the draft environmental statement,
20 please refer to the applicable pages of that statement, and if
21 information is quoted from technical or scientific journals or
22 other publications, please give the name, author, page number and
23 date of the publication.

24 Participants may submit written statements at the conclusion
25 of their oral presentations. The statements will be marked as exhibits.

1 I do not, however, wish to receive written statements as exhibits unless
2 they contain material that has not been covered in the oral presentation.

3 It will be quite helpful to the reporter if we could obtain
4 copies of any prepared statements. Accordingly, the participants will
5 be contacted as they approach the speaker's table to see if copies of
6 their presentation are available. Any such statements will not, however,
7 become a part of the record unless a specific request is made and unless
8 it contains material that is not covered in the oral presentation.

9 Oral statements at the hearing will be limited to a period of
10 10 minutes. What I'll do in this particular instance, after about 8
11 minutes, I'll give a light tap of the gavel and allow about 2 minutes
12 to conclude. This limitation will be strictly enforced in that we have
13 a large number of witnesses and we would like to hear everybody. To
14 the extent that time available after presentation of oral statements
15 by those who have given advance notice, I will give others present
16 an opportunity to be heard.

17 In addition to that, I have about 7 or 8 people who filed late
18 and I will take them right after I have called the first list. If you
19 are not present, anyone not present when I call your name, that name
20 will be dropped to the tail end of the list and we'll call you one more
21 time.

22 The first witness this morning is Thomas Ten Eyck on behalf
23 of Governor John A. Love.

24 STATEMENT OF MR. EYCK

25 Mr. Day, gentlemen on the Panel, ladies and gentlemen, before

1 the day is out you will hear statements from the State Government and
2 before this is closed on October 23, perhaps additional and detailed
3 statements from various elements of State Government will be furnished
4 to the Department for their consideration as they review the draft
5 statement.

6 I'm now going to read for you a statement prepared by and on
7 behalf of Governor John Love, State of Colorado.

8 "Thank you, Mr. Examiner, for giving me this opportunity to
9 state the position of the Government of Colorado on the development
10 of oil shale.

11 Every up-to-date prediction about the supply and demand of
12 energy in the United States over the next few years shows clearly
13 that there will be an ever-increasing energy deficit. Our domestic
14 reserves of environmentally acceptable fuels are being depleted
15 faster than new reserves are being discovered, and, of course, our
16 population is growing. This means that even if each of us consumes no
17 more energy in future years than he now does, the supply-demand gap
18 will continue to widen.

19 Our efforts to clean up our environment also are causing our
20 total energy consumption to rise. For example, our new, cleaner car
21 engines get fewer miles per gallon; energy must be expended to remove
22 the sulfur and other pollutants from the fuels we burn; and we are
23 increasing our reliance on electricity which is a cleaner, but less
24 efficient energy source.

25 The growing energy gap must be filled, either by increased

1 reliance on imported oil and gas, which history has shown us to be
2 insecure, or by development of vast new domestic resources. The oil
3 shale reserves in the Piceance Creek Basin of Colorado constitute the
4 largest known hydrocarbon deposit in the world and can make a very
5 important contribution to the solution of our national energy crisis.

6 Looking at the energy problem on a statewide scale instead of
7 the nationwide scale, our projections show that Colorado will also soon
8 have it's own energy deficit. Coloradoans have been fortunate that over
9 the past several decades Colorado's oil and gas reserves have been
10 ample to supply our local energy needs, enabling us to be a net exporter
11 of energy. However, these reserves of clean fuels are now declining,
12 so that by 1976 we estimate Colorado will be a net importer of energy
13 unless new sources of environmentally clean fuels are developed within
14 the State.

15 Thus, there are very strong reasons why shale oil should be
16 developed now. Nevertheless, it has been since its inauguration, and
17 continues to be, the policy of this administration that oil shale will
18 not be developed until we are satisfied that it can be done without
19 causing significant environmental damage or otherwise degrading the
20 quality of our lives.

21 Additional environmental studies, funded in part by the State
22 of Colorado, are underway. The total cost of these studies will be
23 approximately \$700,000.

24 The State of Colorado has for several years been monitoring
25 the environmental effects of oil shale prototype development projects,

1 and this vigilance will continue.

2 We will keep ourselves fully informed of oil shale development
3 plans and operations, and there will be strict enforcement of all of
4 Colorado's environmental protection laws, and I will recommend new
5 legislation as it may be required.

6 We are encouraged that the Federal Government appears to be
7 exercising very careful control over all aspects of oil shale develop-
8 ment which may affect the environment. The proposed lease stipulations
9 seem, after preliminary analysis, to give the Federal Government the
10 ability to prevent unacceptable changes in our environment. However,
11 we do not rely on these lease stipulations or on the Federal Government
12 to protect the environment of our State. The Government of the State
13 of Colorado will independently enforce its own environmental protection
14 laws.

15 I understand that the Draft Environmental Impact Statement under
16 consideration today points out that under some circumstances oil shale
17 development might cause air and water pollution. I have directed the
18 appropriate Colorado State agencies to review the Impact Statement with
19 care and to advise me. If it appears that oil shale development cannot
20 take permit development. If development does go forward, we will be
21 vigilant and forceful to secure continuing compliance with State
22 standards.

23 Assuming, as I believe, that oil shale can be developed
24 consistently with the needs of our environment, there are substantial
25 potential benefits to be enjoyed by Coloradoans. The oil shale region

1 has long lagged behind the State average economically. Unemployment has
2 been higher and per capita income lower. The jobs and income which an
3 oil shale industry would create for Coloradoans would be very welcome
4 there. And, of course, there would be a significant increase in State
5 revenues generally.

6 Mr. Examiner, we are grateful to the Department of the Interior
7 for conducting these hearings in Colorado to receive the comments of
8 Coloradoans, who would be most directly affected by an oil shale industry.
9 We are also grateful for the excellent cooperation and communication
10 which the Government of Colorado has had with the Federal Government,
11 and with industry and environmental groups as well. We trust this
12 cooperation will continue so that we can most effectively discharge our
13 duty to protect the interests of the citizens of Colorado."

14 That concludes the Governor's statement, I have given a copy
15 to the reporter.

16 MR. DAY: Thank you very much. I'll now exercise the prerog-
17 ative that will be exercised numerous times today, and take a name out
18 of order. I now call on Doctor Francis Brush.

19 DR. BRUSH: Thank you, Mr. Chairman.

20 STATEMENT OF DOCTOR BRUSH

21 Mr. Chairman, I would like to express my thanks for the
22 opportunity of being here today to present testimony on proposed oil
23 shale development in Colorado.

24 Nearly a month ago I wrote a letter to the Secretary of the
25 Interior, Rogers C. B. Morton, commenting on the environmental impact

1 statement of the proposed oil shale development. I would like to read
2 that letter here as a part of my statement:

3 "Dear Mr. Secretary: In reviewing the recent environmental
4 impact statements on oil shale developments in Colorado, Wyoming, and
5 Utah, it is obvious that such developments will have serious and long-
6 lasting impact on the environment. In particular, it will affect the
7 quality of life enjoyed by many of the citizens of those three states
8 as well as the citizens of the rest of these United States who visit
9 this region.

10 It is also becoming obvious that oil shale development is not
11 the best solution to our so-called energy crisis. It merely represents
12 a slightly different approach and one which will continue to degrade the
13 environment. I fear that once we have expended funds for oil shale
14 development, there will be a great impetus for continuing the program
15 on a large scale and to the detriment of research and development efforts
16 in other areas of energy production.

17 Before committing ourselves to such irreversible and damaging
18 developments, we must begin now exploring all possible energy sources.
19 I would ask, for example, that a crash program be initiated to explore
20 economic development of solar, tidal, and geothermal energy sources.
21 Solar power in particular offers great hope for supplementing existing
22 energy supplies, and yet funding for solar power research is minimal and,
23 as far as I can determine, practically no corporate funds are being
24 spent in this important area. Since roughly one-third of all crude oil
25 is converted to fuel oil, a major source of heating and power is this

1 nation, efficient and economical solar power utilization would reduce
2 the need for more oil.

3 There are other possibilities as well. Hydrogen as a chemical
4 fuel offer potentation in some uses but, until now, the cost of separating
5 it catalytically and electrolytically has been prohibitive. Recent
6 breakthroughs, however, at the Euratom research center at Ispra, Italy
7 offer the possibility of producing hydrogen much more economically.
8 (And, by the way, solar power lends itself nicely to this process and
9 may be quite useful.) I'm sure you are aware that hydrogen is the
10 cleanest fuel available - its combustion product is water. And the
11 supply, on a global scale is virtually limitless in the water that
12 covers two-thirds of the earth's surface.

13 I offer these as possibilities, not as certainties. My main
14 point is that we haven't explored thoroughly all of these possibilities.
15 Moreover, there are some great needs in the area of social planning that
16 should be implemented. The development of efficient mass transportation
17 systems for our urban areas can greatly reduce consumption of gasoline
18 (to say nothing of alleviating air pollution as well). And until we
19 have put forth a massive effort for such research and social planning,
20 we should not continue developing at this time such destructive and
21 polluting energy sources as oil shale. The shale will still be there
22 in the future, if and when we need it.

23 I would therefore like to ask you to declare a moratorium on oil
24 shale development until such a time that we have thoroughly exhausted
25 possible development of other, cleaner sources of energy. I would also

1 ask you to join me in urging that a massive, NASA-type research program
2 be undertaken to develop solar, tidal, geothermal, and other such energy
3 sources. If indeed the energy situation for this nation is reaching
4 crisis proportions as some would have us believe, then it would seem
5 logical to pursue research into all potential energy sources, particularly
6 those that promise minimal environmental impact and as quickly and as
7 vigorously as possible.

8 The citizens of Colorado do not treat lightly their quality of
9 life. Clean air and water and unspoiled mountains and forest are the
10 essential elements of making Colorado a desirable place to live,
11 especially since these elements are becoming rare elsewhere across the
12 nation. The development of oil shale will seriously impair the quality
13 of life for Colorado citizens and I feel that most people here question
14 the wisdom of such development at this time."

15 As you can see, I am quite firmly opposed to any development
16 program on oil shale until such a time as we have thoroughly exhausted
17 research and development efforts on such things as solar, tidal, geo-
18 thermal, nuclear fusion, or other less environmentally damaging sources.

19 I am also quite aware of the current scare tactics being used
20 by big business interests, unfortunately often being supported by
21 professional partisans, tactics which allude to a so-called energy
22 crisis.

23 I charge that such tactics are being used to rush the public
24 into supporting unwise and immensely damaging developments. And the
25 deception is being carried out by industries that have done virtually

1 nothing to explore new energy sources.

2 For example, recent figures show that power companies in this
3 nation collectively spent a mere 46 million dollars last year on research
4 and development. Most of this, apparently, was research and development
5 on new products and uses of electricity and on pollution control.
6 Practically nothing was spent on solar energy research.

7 By comparison, these same companies spent an astonishing and
8 irresponsible 365 million dollars on advertising on entice people to
9 use more and more electricity. In other words, more than seven times
10 as much was spent on advertising than was spent on research and develop-
11 ment.

12 Similarly, the oil and petroleum industry invests huge amounts
13 of money on advertising their destructive and polluting products, but
14 as far as I can determine, practically nothing is spent on developing
15 clean energy sources such as solar power. Such activities represent
16 the epitome of industrial irresponsibility.

17 But even worse, we are now being asked to allow these
18 corporations to continue such madness or an even larger and more
19 destructive scale in the development of oil shale deposits. And despite
20 the soothing pronouncements of oil industry public relations people,
21 this development is going to cause irreparable damage to Colorado's land
22 and water and air. It will adversely affect the quality of life of
23 not only the people in the immediate area of development, but the citi-
24 zens all over Colorado.

25 I urge that we begin a massive, federally funded research and

1 development program of the same scale as the space program to investigate
2 all possible energy sources. Furthermore, we should set a timetable
3 as we did in the NASA program, so that by the end of this decade we
4 might be enjoying the benefits of clean, solar energy, for example.
5 I think that such a program is absolutely vital because, as scientists
6 have pointed out, the fossil fuels available on this planet are limited.
7 Sooner or later we must seek out alternatives. I say we should do it
8 now and not wait until Colorado has been stripmined and laid waste.

9 Thank you, sir.

10 MR. DAY: I would like to ask the witnesses to state their
11 full name and affiliation.

12 STATEMENT OF PETE BARROWS

13 MR. BARROWS: Mr. Day, Members of the Board, Ladies and
14 Gentlemen, my name is Pete Barrows, Colorado Division of Wildlife. I'm
15 here today to make a short general statement concerning the comments on
16 the Draft Environmental Statement for the proposed prototype oil shale
17 leasing program.

18 The Colorado Division of Wildlife is currently reviewing the
19 Proposed Statement to Develop Oil Shale on two 5,120 acre leases on
20 federal lands in the State of Colorado. The Draft Environmental State-
21 ment states that "oil shale development would produce direct and indirect
22 changes in the environment of the oil shale region..." Some of the
23 changes would be local, some regional and others national.

24 The Division must necessarily submit written comments to the
25 oil shale coordinator as we have had insufficient time to comprehensively

1 review and analyze the Environmental Statement. We will submit general
2 comments concerning the impact of oil shale development on a national
3 and regional scale, specific comments on local impacts.

4 Essentially, the wildlife resources of the Piceance Basin will
5 be adversely affected by any development of oil shale. Consequently
6 from a purely wildlife viewpoint we would oppose any development. We
7 are concerned with the future of the wildlife resources in the area
8 and have and will continue to do all possible to prevent an irreparable
9 loss; failing this we will assuredly attempt to require the mitigation
10 of any loss.

11 The State of Colorado, four Colorado counties, the federal
12 government and the 12 petroleum companies involved in shale development
13 have entered into a \$715,000 contract to finance a two-year independent
14 study of the prototype shale development program.

15 Four committees have been created to monitor the studies:
16 1) Revegetation and Surface Revegetation and Surface Rehabilitation;
17 2) Environmental Inventory and Impact; 3) Water Resource Management;
18 and 4) Regional Development and Land Use Planning. Much of the
19 necessary data will be collected, compiled and analyzed by these
20 Committees. We feel the information provided by the Committees should
21 become an integral part of any proposed oil shale development, thus a
22 review and analysis of the Environmental Statement might be premature
23 at this time.

24 We appreciate the opportunity to appear before the Panel.
25 Thank you.

1 MR. DAY: Mr. John H. Tippit.

2 STATEMENT OF JOHN H. TIPPIT

3 MR. TIPPIT: Good morning. My name is John H. Tippit, 1704
4 Security Life Building in Denver, I represent the Rio Blanco National
5 Gas Company and Rio Verde National Gas Company, and I would like to say
6 that my clients do appreciate the opportunity of backing in the order
7 immediately behind Governor Love and Mr. Brush and Mr. Barrows, parti-
8 cularly in view of the fact that up until the game started this morning
9 we weren't even in the program. We refer there to the list of the
10 people--the companies--who were invited to make comments or appear
11 before the Department of the Interior with suggestions toward the Draft
12 Environmental Statement. I hope though that through the remarks and the
13 statements submitted by my clients that their interests will be shown
14 to you to be very real and present and significant with reference to the
15 suggested Oil Shale Prototype Development Program.

16 The Rio Blanco Companies are composed primarily of independent
17 oil men who started and still are primarily controlled by Colorado
18 citizens. These companies own some 33,000 acres of oil and gas leases
19 covering land in the oil shale area.

20 In Tract C-b, which is one of the 2 tracts suggested for
21 Colorado, the Rio companies own oil and gas leases covering some 40
22 percent of the lands in that particular tract. The impact resulting
23 from the oil shale suggested program, consequently, is most significant.

24 The principal thrust of the statement which has been presented
25 for your study at a later time, is that the Draft Environmental State-

1 ment in some incredible manner fails to consider the full impact of the
2 Suggested Oil Shale Development Program on oil and gas development. The
3 direct impact is mixed in with the impact on some 35 other subjects such
4 as hunting, fishing, soil erosion, whatever it might be. One of those
5 other 35 subjects is "other minerals." In the other minerals I suppose
6 that oil and gas is one of the other minerals. There are really no
7 direct statements in the Draft Environmental Statement as to what the
8 effect on the oil and gas specific development in this area might be.

9 A kind of lip service is given to the problem by saying that,
10 and I quote, "to the extent practical," some compatible solution might
11 be worked out, these other minerals might be produced too. We believe
12 that is really not a proper handling of the matter and, consequently,
13 consideration should be given to the impact on oil and gas development.

14 For instance, Tract C-b is located entirely in the Rio Blanco
15 area. As far as I have been able to find out, the entire, all three
16 volumes of the Draft Environmental Statement, never mention Rio Blanco
17 unit area. This is one of the largest unit areas of the development of
18 oil and gas in the Continental United States, consists of 93,000 acres.
19 It is a significant development which, by its approval through the United
20 States Geological Survey, is shown to be in the public interest, in the
21 view point of conservation of oil and gas.

22 The second thing that the Draft Environmental Statement might
23 have given some slight notice to is that the Rio Blanco unit area in
24 Project Rio Blanco stimulation type gas formation are interrelated to
25 Atomic Energy Commission, many private companies have spent untold sums

1 of money and expended great effort in determining or trying to determine
2 the potential of gas production from the Rio Blanco unit area.

3 As incredible as it may seem, I find no absolute statement in
4 this Draft Statement as to the direct effect on Project Rio Blanco of
5 the proposed Oil Shale development. More forthright, in that consider-
6 ation, are articles which have appeared in Colorado newspapers; the copies
7 of these articles are appended to our Draft Statement, one, the Grand
8 Junction paper and one, the Rifle paper. Both of these newspaper
9 articles said in the view of some people of the Department of the Interior
10 that these two programs, meaning the Project Rio Blanco and the Oil
11 Shale Development Program "will not mix," whatever that means.

12 The articles go further to state that the Department holds a
13 dim view of the entire Plow Share Program. This would seem to be not
14 exactly in context with the boss of the Department of the Interior,
15 President Nixon, who in his June 4, 1971 statement on clean energy gave
16 us one of the very viable alternatives, the use of nuclear stimulation
17 of tight gas formations. We believe that with some 11 million acres to
18 have been chosen from that the selection of Tract C-b, in both Rio
19 Blanco unit area as well as being vitally associated with Project Rio
20 Blanco, was a deliberate confrontation which could have been avoided.
21 Many other lands, as this Board knows, were excluded lands. For instance,
22 for deer winter range, for fish stream management, or even for a trona
23 deposit, were excluded for consideration.

24 We believe in the absence of the Department wanting a strict
25 oil shale development and Project Rio Blanco, that these lands could

1 have been excluded too, where they were included in a federally approved
2 unit area. We believe that, consequently, the Draft Environmental
3 Statement should have been candid and direct in this view that if it
4 really did intend to kill the Project Rio Blanco, it did intend to have
5 an adverse effect on all oil and gas development which it was not prepared
6 to resolve at that moment in favor of oil and gas, it should have said
7 so, as implied in these various newspaper articles, keeping in mind the
8 tremendous potential affect upon the national interest of losing the
9 potential 300 trillion cubic feet of gas that Project Rio Blanco may be
10 able to produce, the 150 billion cubic feet of gas, which is a potential
11 just in Tract C-b, and to say not the least from the viewpoint of my
12 clients, 30 million dollars or so worth of gas attributable to their oil
13 and gas lease in Tract C-b, and only some of the formations. All of
14 this leads to what we believe to be justification for a direct and
15 perhaps blunt statement on the whole matter which my clients are willing
16 to make.

17 They believe those in the Department who are in charge of oil
18 shale development, and no doubt with the encouragement of private
19 companies who have the same accord have already made a decision which
20 will become more apparent in the future, that oil and gas developments
21 must surrender to oil shale development in the Rio Blanco unit area.
22 We believe that this was a decision that was not necessary and which,
23 in large part, resulted in the location of Tract C-b, which had to lead
24 directly to such a confrontation.

25 We believe the exhibits and the attitude unbelievably presump-

1 tuous in three regards: one, it violates the spirit of the statement
2 of the President as to a balanced consideration of all sources of
3 energy, as well as the commendable goals recited in the Draft Statement;
4 two, it is apparently willing to destroy or attempt to destroy Project
5 Rio Blanco, with the enormous potential impact on the national energy
6 crises, which this would embody, and yet, never note the matter directly
7 as a possible impact, and third, in doing this, it has unilaterally pre-
8 empted another department of government, the Atomic Energy Commission,
9 which has not, to our knowledge, been made aware of this confrontation
10 thus created.

11 Our recommendations with reference to the statement is as
12 follows: First, the impact of oil shale development, of oil and gas,
13 should be considered fully. The few lines given the subject by
14 generalizing to the effect that the development of other minerals would
15 be compatible where possible is not sufficient. Secondly, the impact
16 of oil shale development on Project Rio Blanco should be likewise
17 considered fully. If as stated in these newspaper articles, Project
18 Rio Blanco would be prohibited, that should be stated directly, and
19 its effect on the national interest considered. Thirdly, Tract C-b
20 should be redesignated at another location not in a federally approved
21 unit for oil and gas development. To a great extent and, perhaps
22 completely, this might eliminate the problems of one and two. Fourth,
23 if policies have been formed by the Department of the Interior which
24 are antagonistic to oil and gas development, whether nuclear or con-
25 ventional, in an oil shale area, then in fairness to oil all these

1 policies should be made known at all. And last, decisions involving
2 major preferences between potential large sources of energy should not
3 be decided unilaterally in one Department of the government, but instead
4 should be the subject of study by a congressional committee unilaterally
5 in one Department of the government, but instead should be the subject
6 of study by a congressional committee, the White House Energy Committee,
7 the OEP, the FPC, or another body not committed to a particular viewpoint.

8 Thank you, very much.

9 MR. DAY: Thank you, Mr. Tippet.

10 I now call on the Equity Oil Company.

11 STATEMENT OF PAUL M. DOUGAN

12 MR. DOUGAN: Gentlemen, my name is Paul M. Dougan. I am an
13 officer of Equity Oil Company. Equity Oil Company has actively been
14 engaged in various aspects of the "oil shale industry" since 1950.
15 The company owns 4,568 acres patented fee land in the Piceance Creek
16 Basin, Colorado. It has conducted laboratory and field research in
17 an effort to develop an in situ process for the production of oil from
18 oil shale and has drilled 61 wells in the Basin which have penetrated
19 the oil shale section. Geologic and reservoir information obtained
20 from this drilling was furnished to the Bureau of Mines and has
21 provided a substantial portion of the oil shale resource data which
22 is available today in the Piceance Creek Basin. To date we have
23 expended \$2,800,000 in oil shale research and this expenditure does
24 not include the drilling costs associated with the aforementioned wells.
25 These activities, coupled with the observation of the oil shale scene

1 for more than twenty years, qualify us to comment on the environmental
2 statement for the proposed prototype oil shale leasing program,
3 particularly as it related to the Piceance Creek Basin, Colorado.

4 The Draft Environmental Statement presents a thorough
5 factual basis for assessing the potential impact of an oil shale
6 industry on the environment but, in our opinion, the Statement
7 is deficient in the following respects: (1) it does not adequately
8 speak to the alternative of private development; (2) it does not
9 set forth sufficient criteria by which the value of the proposed
10 lease offering should be measured; (3) it does not present a
11 basis for making a judgement on how an oil shale industry will
12 come into being in the proposed time frame at the projected
13 production rate of one million barrels per day by 1985; and (4)
14 it does not in the proposed from of lease provide for the compatible
15 development of oil and gas, trona, coal and other mineral deposits.

16 FIRST POINT

17 At the present time an "oil shale industry" does not
18 exist. Constant references to the industry in the press and
19 elsewhere are misleading. What does exist are field type
20 research projects conducted by a few large and small companies.
21 Most, if not all, of this "industry" has been conducted in the
22 Piceance Creek Basin. The research includes the in situ as well
23 as mining and retorting and has been conducted by private
24 companies on fee land. This research, conducted sporadically
25 over two decades has failed to produce a commercial oil shale

1 operation.

2 There is now and has been for many years more than
3 sufficient land in private ownership to support the develop-
4 ment of an oil shale industry. There are 400,000 acres of
5 private land in Colorado containing an estimated 210,000,000,000
6 barrels of oil in place as oil shale. (Table II-6, Vol. I).
7 In fact, this land includes the only property outside of
8 the Naval Oil Shale Reserve where underground Room & Pillar
9 mining using access through a canyon wall has been applied,
10 and this is the only method of underground mining which has
11 been tried in oil shale. In short, no less than thirteen
12 major oil companies hold private land capable of supporting
13 either oil shale mining/retorting operations or in situ
14 operations, and the barrier to development of this land is
15 not lack of access to more Government land, but the failure
16 of these companies to develop to date technology which will
17 allow the economic recovery of the oil shale resources. To
18 the present time, only The Colony Development operation has
19 indicated that it may have the ability to proceed in the near
20 future with the construction of a commercial oil shale opera-
21 tion and at the present time the decision to proceed, so far
22 as we are advised, has not been made. Because of the land
23 position of the Colony Group, it must be assumed that the
24 decision to proceed will be made on the basis of process
25 economics and the ability to make a fair rate of return on

1 the very substantial investment required and not on the
2 availability of Government land. The companies who are most
3 likely to bid on the proposed lease sale are the same companies
4 who now hold private land. If they cannot and have not built
5 plants on and developed their private land which is more
6 accessible from a mining standpoint, how can it be logically
7 assumed that they or anyone else will develop public land?

8 SECOND POINT

9 The Bureau of Mines has conducted extensive oil
10 shale research spanning a period of many years. This work
11 has included both mining/retorting research at their Anvil
12 Points facility, laboratory research at the Laramie Petro-
13 leum Research Center, and in situ research near Rock Springs,
14 Wyoming. All of this research has failed to yield a
15 commercially operating process for the recovery of oil from
16 oil shale. If economic criteria for the selection and
17 leasing of public oil shale land has been established by
18 this research, this criteria has not been set forth in the
19 Environmental Impact Statement. Absent such criteria, it
20 must be assumed that the Department of the Interior does not
21 have adequate economic information on which to base the
22 acceptability of a competitive bid nor to establish applica-
23 ble rents or royalties. In view of this situation, it can
24 only serve the cause of rational development that any leasing
25 program require a guarantee of development or minimum

1 expenditure in a fixed period of time. Unless this is required, there
2 is no reasonable assurance that commercial production will be obtained.
3 Nor is it clear that if obtained the technology developed, if any, will
4 be utilized to develop Federal lands and thus inure to the benefit of
5 the public. Absent a definitive obligation to develop in the lease
6 agreement, the Department of the Interior should await the finalization
7 of commercial development by private industry on private lands. At that
8 time it could assess the economics of an oil shale operation and conduct
9 leasing of the public land on the basis of established value.

10 THIRD POINT

11 Based on the public statements of The Colony Group, the con-
12 struction of an initial plant will require approximately three years.
13 It appears possible that one plant could be on stream at the end of
14 1976, assuming that the decision to proceed is made this year. However,
15 it is wishful thinking to project any other plants coming on stream
16 until the commercial technology of the first plant is proven. If the
17 initial plant has a shakedown period of only one year, it would be at
18 least 1978 before construction of any second generation plant could be
19 started and 1981 before it could be on stream at full production. Until
20 proven commercial technology has been developed, there is no reasonable
21 basis upon which to project how many plants will be built by 1985 and
22 the suggested goal of one million barrels per day by 1985 is unsupport-
23 able.

24 FOURTH POINT

25 In his energy message of 1971, President Nixon not only called

1 for the early development of the oil shale resources, but also called
2 for the development of all forms of energy, including gas reserves by
3 nuclear stimulation providing it could take place safely. The President,
4 in effect, reiterated the policy of multiple use of resources which has
5 been an underlying principal of Federal land management for many years.

6 A very large portion of the oil shale of Colorado, Utah and
7 Wyoming is underlain by other formations which contain presently and
8 potentially valuable supplies of oil and natural gas and other minerals.
9 Some of these deposits are recoverable by conventional technology, and
10 some can only be recovered by new techniques such as nuclear stimulation.
11 In fact, the Bureau of Mines has estimated the natural gas reserve which
12 may be recoverable by nuclear stimulation to be 300 trillion cubic feet.

13 Notwithstanding this fact, the Environmental Impact Statement
14 takes the patently inaccurate position that the alternative of nuclear
15 stimulation of natural gas reservoirs is not now considered a viable
16 alternative when compared to its unsupportable and arbitrary projection
17 of one million barrels per day by 1985.

18 The mandate of the Environmental Protection Act is that
19 resources and environment must be balanced so that the need of one does
20 not create disproportionate harm to the other. It is also a part of
21 that mandate that the need for energy cannot be solved unless every
22 effort is made to efficiently manage the development and production of
23 all energy resources and it is manifestly wrong to develop and produce
24 one energy resource at the expense of another. It is in this area that
25 the Statement is critically deficient in that it leaves the multiple

1 development of valuable energy resources to inferences so vague that it
2 lends itself to any future decision of convenience.

3 Under the National Environmental Protection Act (NEPA),
4 whenever a project which may have substantial impact on the environment
5 is under consideration, the Federal agency having special expertise is
6 given the task of studying the effect of the proposed project on the
7 environment and is required under law to prepare the final environmental
8 statement. The Atomic Energy Commission as the lead agency for the
9 Rio Blanco Gas Stimulation Project has performed its imposed by law
10 duty and has made a detailed study of the compatability of nuclear
11 stimulation of natural gas and oil shale development. In its final
12 environmental statement, the A.E.C. after months of study and after
13 conducting public hearings similar to these concluded as follows:

- 14 (a) That nuclear stimulation of natural gas is compatible
15 with the development of oil shale in the Piceance Creek
16 Basin. (F-14, Section 5)
- 17 (b) Not only is the Rio Blanco Project intended to prove
18 the feasibility of recovering gas from tight formations,
19 but it is also designed to obtain data on the recover-
20 ability of gas specifically from the Piceance Creek Basin.
21 The location of the project can be justified on several
22 grounds. Not only is more known about the extent and
23 distribution of gas in these tight formations than is the
24 case for other areas (due to the large amount of gas well
25 drilling in the area), but also the gas reserves are at

1 a sufficient (vertical) distance from the other mineral
2 reserves that no damage will be done to these reserves by
3 the detonations (Sections 5 and 6 of the final Environ-
4 mental Statement).

5 (c) Responsible government officials have based their
6 evaluation of the nuclear gas stimulation technology on
7 the estimate of 300 trillion cubic feet of natural gas
8 being amenable to recovery by this method. It is felt
9 that the estimate is as reliable as are the estimates
10 of total fossil fuel reserves available to the United
11 States. (F-17, Section 2)

12 In summary, the lead agency having the legal duty to evaluate
13 the impact of Project Rio Blanco on the environment has made an adminis-
14 trative finding of fact that Rio Blanco is compatible with concurrent oil
15 shale development. This finding by the agency empowered and required
16 by law to make such a determination should lay at rest further con-
17 sideration of any objection or opposition to Rio Blanco proceeding at the
18 same time as an oil shale development program.

19 It follows, therefore, that it should be clearly and
20 specifically provided in the final draft of the Statement that multiple
21 development is mandatory and provide that any form of oil shale lease
22 agreement will contain a specific provision to the effect that the
23 Lessee agrees to the compatible development of oil, natural gas and other
24 mineral deposits on the public land. If the Department fails to do this,
25 it disregards its legal duty.

1 CONCLUSION

2 The Draft Environmental Impact Statement is seriously deficient
3 in the particulars outlines, and the Department of the Interior has the
4 duty to present a full and fair disclosure of all relevant factors
5 including its intentions with regard to the compatible development of
6 all mineral resources in the proposed lease areas. In considering
7 alternatives to the proposed lease program, it should not indulge in
8 the use of unsupportable numbers as a basis for comparison until
9 commercial production of oil from oil shale becomes a reality.

10 MR. DAY: Thank you very much, sir.

11 I call Mr. R. E. Foss, Sun Oil Company.

12 STATEMENT OF R. E. FOSS

13 MR. FOSS: Mr. Day, Members of the Panel. I am R. E. Foss,
14 President of Sun Oil Company's North American Exploration and Production
15 Group.

16 I appreciate this opportunity to appear before you today to
17 respond on behalf of my company to the Department of the Interior's
18 request for comments on the "Draft Environmental Statement for the
19 Proposed Prototype Oil Shale Leasing Program."

20 The three-volume draft has been analyzed by Sun staff
21 personnel who have been working on the oil shale study. This statement
22 today gives briefly the views and position of Sun management based
23 upon that analysis.

24 We request permission to file a more detailed statement, with
25 references to pages and with suggestions for changes in language, before

1 the record closes in order that the more detailed suggestions be
2 included as a supplement to this statement.

3 First, we would like to acknowledge the impressive and
4 extensive research that went into preparation and publication of the
5 Draft. The people in Interior whose work and expertise went into
6 compiling the impressive statement certainly are to be complimented.

7 Secondly, I can assure you that Sun Oil Company supports the
8 premise that a prototype program affords the best hope for achieving
9 the goal of providing for the United States

10 ... (a) this new source of energy

11 ... (b) in a time frame that is early enough to be of benefit

12 ... (c) with a commercial technology which will permit the
13 development by private enterprise

14 ... (d) in a manner which will afford a minimum adverse impact
15 on our environment

16 Sun Oil Company recognizes its environmental responsibilities
17 and has no real quarrel with the pure environmental conclusions of this
18 Draft Statement. However, we must point out our serious doubt that
19 these volumes as a whole present the true economic perspective when they
20 touch upon prices and rates of return and upon expenditures for
21 investments and operating costs, which will include items for conserva-
22 tion and reasonable land restoration. For example, in Volume I under
23 the caption "Environmental Impact," there is a discussion which includes
24 statements that:

25 (a) A minimum-sized commercial complex would produce 50,000-

1 barrels a day or possibly as high as 100,000 barrels a
2 day.

3 (b) The capital investment required would be from 250 to 500
4 million dollars.

5 (c) A rate of return of 10 to 13 percent is anticipated.

6 (d) Calculations are based on an assumed oil price of \$3.90
7 per barrel.

8 Not only must economic factors be considered, but also we must
9 be realistic in all of our considerations. There must be a balancing
10 of such considerations as the revenues from the oil, the grade of shale
11 to be processed, and the extent of land restoration required. Sun has
12 had a pretty thorough introduction into the problems of recovering oil
13 from tar sands, and we believe that this experience is useful here.
14 On the basis of that experience, we have reached these conclusions;

15 (a) A facility capable of recovering 50,000 barrels of oil
16 per day from the shale would be a tremendous earth
17 handling operation. Such an operation could be called
18 "minimum" only in the sense that nothing smaller would
19 have much chance of being considered commercial.

20 (b) A range of 250 to 500 million dollars is an extremely
21 soft estimate. On the basis of tract records, it is safe
22 to say that such estimates of capital requirements usually
23 prove to be on the low side.

24 (c) As indicated in the Environmental Statement, a 10 to 13
25 per cent rate of return could be acceptable, but investors

1 supplying the 250 to 500 million dollars of capital would
2 need some assurance that such a rate is attainable after
3 allowing for unforeseen costs associated with developing
4 a new process. It must be remembered that the investors
5 in this proto-type program cannot rely upon recoupment of
6 losses out of future plants or leases. The prototype
7 investors have no assurance that they will ever get
8 another oil shale tract.

9 (d) No basis is suggested for the assumption of an oil price
10 of \$3.90. It is not clear from the Environmental
11 Statement whether this price is expressed in terms of
12 today's dollars or future dollars. The oil that will be
13 produced and sold from shale is many years down the road.
14 We are not prepared to guess what the price of oil or
15 the value of oil will be at that point in the future. It
16 is our opinion that the prototype programs would not be
17 commercial unless more revenues are generated for the
18 programs than would be derived from the sale of oil at
19 \$3.90 per barrel in terms of today's dollars.

20 We note that Volume II devotes considerable space to the
21 relation of oil imports to the future of oil shale. There can be no
22 question about their interdependence. Furthermore, for the short term
23 there seems to be no choice other than to utilize foreign oil to make
24 up the deficiency between domestic demand and supply. The danger is in
25 allowing our future dependence on foreign oil to reach unacceptable

1 levels---certainly not the levels of over 40 percent in 1985 as projected
2 in Volume II. We simply must find the best way to make imports work for
3 the solution of this Nation's energy crisis.

4 We are gratified to find in Volume III a recognition that the
5 lease bonus itself constitutes an undesirable economic burden on develop-
6 ment. While spreading of the bonus over several years will help, the
7 fact remains that capital paid out for bonus still is capital not
8 devoted to developing the prototype programs. I don't know what the
9 Government might be required to do with this bonus money, but certainly
10 a logical use would be to find a way to plow it back into the oil shale
11 program.

12 In this connection, Interior's mention of possibly crediting
13 extraordinary environmental costs against royalty of these prototype
14 programs is a step in the right direction. Surely there are other
15 powers which the Secretary has under existing law, or might obtain
16 under future law, to insure the progress of these needed but very
17 expensive oil shale prototype programs. We believe the welfare of the
18 Nation requires it.

19 Thank you for the opportunity to express Sun Oil Company's
20 view on this important matter. Having done so briefly, I request
21 permission to file later the more detailed suggestions I mentioned
22 earlier for inclusion in the record as a supplement to this statement.

23 MR. DAY: Thank you very much, Mr. Foss.

24 I call on Richard D. Ridley, Garrett Research and Development
25 Corporation.

STATEMENT OF RICHARD D. RIDLEY

MR. RIDLEY: My name is Dick Ridley, I'm the Project Manager for Oil Shale Research for Garrett Research and Development Company, a wholly-owned subsidiary of Occidental Oil Petroleum Corporation.

If I understand the prototype...proposed prototype leasing program, that program is aimed at leasing sufficient oil shale reserves to private industry and those companies participating may demonstrate their ability to produce oil from shale and the impact.

The total amount of land offered is highly limited so that even if major unexpected impacts occur, the overall effect from development of these sites will still be minimal. This concept of trying oil shale development on a relatively small basis before going into a much larger program seems to be the proper approach in meeting our energy needs and protecting our environment as long as we of the country can live with the resultant development, large-scale production from oil shale.

In his "Clean Energy Message" of June 4, 1971, President Nixon stated, and I quote, "Growing demand for energy and growing emphasis on cleaner fuels will create severe pressure on our fuel supplies," continuing the quote, "the task of providing sufficient clean energy is made especially difficult by the long lead time required to increase energy supply. To move from geological exploration to oil and gas well production now takes 3 to 7 years, new coal mines typically require 3 to 5 years to reach the production stage and 5 to 7 years to complete a large steel power plant."

1 The President is right on all counts. There is already varied
2 pressure on fuel supplies, lead time is already long, and the additional
3 environmental protection will, which most of us agree is necessary, will
4 increase the lead time even further.

5 Against this background I believe that there is time only for
6 one prototype leasing program. The next leasing program will almost
7 have to be aimed at achieving large-scale commercial production. Thus,
8 we must have the best possible program at this time.

9 The present program has many desirable features but apparently
10 includes one major misconception which needs modification in one other
11 respect. This may just be part of my reading of it, but first, the
12 program as written emphasizes underground and surface mining coupled
13 with retorting above ground, the impressions given in situ retorting
14 with the shale still in place is not likely to be successful and can be
15 dismissed.

16 It is undoubtedly true the environmental impact of above
17 ground mining and situ retorting, for example, it's obvious that spent
18 shale will not be a problem in situ operations, nor will a large open
19 pit result, which would require later reclamation. The retorting
20 potential problem of leaving spent shale will also not be a problem,
21 a problem with site selection will preclude sites where that will be a
22 problem. Also, quite probably, that there will be fewer people involved
23 in an in situ development than a large scale mining with above ground re-
24 torting. If the reason in situ processing, environmental statement has
25 the recognition of its minimal impacts, I say all well and good. I fear,

1 however, that the reason is such processes have been demonstrated on a
2 large scale, or if they have, the results have not been published.

3 I cannot speak for other companies, but I can say that Garrett
4 Research is the midst of a large scale test of what we believe to be a
5 breakthrough in situ processing. There are other companies like ours
6 without adequate reserves who believe in situ processing is not only
7 feasible but can provide the economically and ecologically sound root
8 needed for oil shale processing. Let us make certain that sufficient
9 sites be present to test on a commercial basis.

10 My second point is that while it appears to be the intention
11 of the Program to provide sufficient sites the actual selection can
12 almost be guaranteed to be inadequate for demonstration of the various
13 processes. Six, is probably a reasonable, maybe even the optimum number
14 of good sites for the prototype program, but two of these sites are
15 totally unusable for any processing approach, either in situ or mining.
16 The reserves are just not there. It is almost axiomatic that processing
17 costs are a function of the tons of shale processed to produce a given
18 quantity of oil, thus it costs almost as much to process a ton of shale
19 as gives us one gallon of oil as does a ton of shale that give us 40
20 gallons of oil. The cost of a barrel is dramatically different. The
21 35 to 38 gallons of oil per ton are marginal at best for today's
22 production; otherwise, we would have a serious development on private
23 lands at this site.

24 Wyoming, according to the impact statement, two narrow beds of
25 25 gallons per ton of oil shale, should be dropped from the program

1 immediately and replaced with two other sites already nominated in
2 Colorado. The case with regard to the Utah sites is not as clear but
3 again, better oil shale than lands in Colorado.

4 In conclusion, if the leasing program will allow situ operations
5 and if, at least, the Wyoming sites can be replaced by additional
6 Colorado sites, this leasing program can provide an excellent means
7 of both environmental processes and economic viability of each of those
8 provisions.

9 As an alternative the present program should be immediately
10 followed with leasing of at least 2 additional Colorado sites, appointed
11 once its apparent that the Wyoming sites do not demand any bonus bid
12 acceptable. Given these changes, we should have a much greater chance
13 of creating an environment while providing a new source of energy at the
14 least possible price to the ultimate consumer of the American people.

15 Thank you, very much.

16 MR. DAY: Thank you.

17 Mr. Kenneth Canfield, please.

18 STATEMENT OF KENNETH CANFIELD

19 MR. CANFIELD: My name is Kenneth Canfield and I hold the
20 position of Operations Manager, Synthetic Crude and Minerals Division,
21 Atlantic Richfield Company. I would like to thank you, both on my own
22 behalf and on behalf of Atlantic Richfield for the opportunity to make
23 a statement at this hearing. We are a member of a venture whose purpose
24 is to develop commercial production from oil shale deposits on lands
25 which are owned by the venture.

1 Atlantic Richfield is the Operator for the venture and carries
2 out these operations with a special organization called the Colony
3 Development Operation. From March 1971, until late April 1972, we
4 operated a 1,000 ton/day semi-works plant at Parachute Creek, Colorado,
5 employing about 250 people. The plant was shut down after successfully
6 demonstrating, by field operations, that a satisfactory technology
7 existed for recovering oil from shale. The current activities of
8 Colony are aimed at the completion of environmental studies and plant
9 design. On completion we will make a final assessment of the economic
10 feasibility of producing 50,000 barrels/day of shale fuel oil.

11 Although we are one of the companies that has interests in
12 privately owned oil shale deposits which we believe are sufficiently
13 large to support an initial commercial operation, we nevertheless are
14 very much in favor of the federal government's proposed prototype oil
15 shale leasing program. Based on extensive engineering and environmental
16 studies conducted by our venture and on our own experience as operator
17 of a semi-works oil shale facility, we believe that there is a present
18 need for oil shale development and that this need will grow significantly
19 as the United States' demand for oil continues to grow much faster than
20 the available domestic supply. (page 33, Vol. II of the EIS). We further
21 believe that it is not only important to proceed with oil shale develop-
22 ment from a product demand supply view, but also from an environmental
23 view. Our reasons for holding these beliefs are:

- 24 (1) The environment will benefit from systematic development
25 of oil shale. The predicted demands for energy are such

1 that it appears that oil shale resources eventually will
2 have to be developed. Delay in development would avoid, on
3 a short-term basis, any effect on the environment, but in
4 the long run the effect would prove more harmful. We
5 reiterate the warning in the EIS (Vol. II, pages 64 and 65):
6 "Prolonged delay may leave no alternative but to react
7 eventually with a crash program to develop this resource.
8 By their nature, crash development programs frequently
9 sacrifice environmental considerations and regional planning
10 to technologic expediency. The balanced progress needed to
11 resolve the complex interrelationship between the environ-
12 ment and technology is denied and orderly development is not
13 possible."

- 14 (2) Oil shale offers a supplemental fuel source which, if
15 utilized, would enhance air quality. The product of a shale
16 plant will be extremely clean, containing essentially no
17 sulphur or ash. If power plants or other facilities burned
18 1 million barrels/day of shale fuel in lieu of 1 million
19 barrels/day of conventional fuel oil, a dramatic reduction
20 of sulphur dioxide emissions would be observed. For example,
21 under existing Chicago regulations fuel oil containing 1%
22 sulphur may be burned. If fuel obtained from shale oil were
23 substituted for a million barrels/day of 1% sulphur fuel oil,
24 sulphur dioxide emissions would be reduced by 100,000
25 tons/year. It is apparent that the trend of the future is

1 towards stricter air pollution requirements and regulations.
2 This trend is evidenced by the strict particulate emission
3 standards of the Los Angeles County Air Pollution District's
4 Rule 67 which controls the total emission from a single
5 plant. If such single plant emission standards are
6 generally adopted it may be possible to comply by utilizing
7 some of the conventional sources of fuel oil. But the ash-
8 free characteristic of shale fuel oil will allow the burning
9 of this material in power generators in compliance with such
10 strict requirements.

11 (3) The only viable alternate to a barrel of shale oil produced
12 is a barrel of imported oil. The future petroleum
13 needs of the Nation will require rapidly increas-
14 ing rates of imports of crude oil and products. The
15 recently completed Chase Manhattan Bank in depth analysis
16 entitled "Outlook for Energy in the United States" indicates
17 that dependence on foreign imports will have increased to
18 some 51% of the total supply by 1985. This compares with
19 20% in 1970 and an estimated 29% in 1972. In addition, more
20 than 75% of the United States' imports are expected to come
21 from the Middle East and Africa by 1985. We would like to
22 point to two major undesirable results of this growing
23 United States dependence of imported oil:

24 (a) Price escalation of imported oil

25 Growing United States' dependence, coupled with the

growing strength of the producing Nations, is almost certain to accelerate their demands for higher prices, which ultimately are reflected in higher cost of energy for United States customers. It is clear from the history of negotiations, that long term contracts have not been a satisfactory mechanism for controlling the spiraling demands of the oil-producing Governments. The potential for interruption of supply, at least on a temporary basis, can be effectively used by these Nations as a bargaining tool. The real and growing strength of these countries is revealed in their current successful negotiations to secure participation in the producing companies and in the nationalization of the Iraq Petroleum Company. The blunt facts are, that as we depend more and more on imported oil, we become, as a Nation of consumers, more and more vulnerable to price increases over which we have no control. Development of an oil shale industry will provide an alternate source of supply, and should substantially strengthen our bargaining position with the producing Nations.

(b) Balance of Payment Problem

The value of oil and gas imports in 1970 was \$2.7 billion. Utilizing the Interior Department projections in 1985 the value of these imports could amount to \$25 billion, a ten-fold increase. To the extent that oil

shale can be used to substitute for increased imports
the U. S. balance of payment problems will be mitigated.

(4) An oil shale industry will bring many benefits to the
Rocky Mountain area. Economically, the development of
a shale industry in the Rocky Mountains will provide
positive benefits to the economy of the area through the
creation of new jobs, and a significant increase in the
goods and services that would be required to support
development of an oil shale industry. New employment
opportunities through lowering the unemployment rate and
increasing medium family income should help to improve the
economy of the area.

It is forecast that the Rocky Mountain area, PAD District
4, as a result of declining production in the area,
would become a net importer of crude oil by 1977/78.

A growing shale industry would reverse this trend. Also,
we believe that industry will take a positive role in
assisting local authorities in their efforts at community
development, with the result that increased population,
resulting from establishment of commercial plants, will
be accommodated by planned development of existing
communities. Such planned development attending the
growth of the oil shale industry offers opportunities
to control adverse environmental impacts and to avoid all
the abuses of uncontrolled population growth.

1 In conclusion, Atlantic Richfield has an active and diversified
2 effort to develop synthetic fuels. It has a reserve base in oil shale,
3 tar sands and coal. It has invested heavily in the development of
4 technology and studies of the environmental impact of commercial oil
5 shale development. We recognize that oil shale cannot be commercialized
6 without some change in the environment, but we are convinced that we will
7 be able to meet, and comply with, reasonable Government regulations to
8 protect the quality of the environment. And, we believe that there are
9 very positive reasons, both economic and environmental, for pursuing the
10 orderly development of oil shale as a supplemental energy source.

11 MR. DAY: Thank you, very much.

12 I now call on Colony Development Operation; would you state your
13 full name, please?

14 STATEMENT OF JOHN S. HUTCHINS

15 MR. HUTCHINS: My name is John S. Hutchins, and I am the Manager
16 of Colony Development Operation. Colony is a joint venture which
17 presently consists of Atlantic Richfield Company as Operator, and the Oil
18 Shale Corporation. Since 1965 Colony has been engaged in extensive oil
19 shale development. The venture's costs to date total between \$40-\$50 MM,
20 fully funded by private industry. Our operational experience and studies
21 exceed any other effort to date in this country.

22 Let me amplify on the size and scope of our efforts to date.
23 A major part of our current development program has involved itself with
24 environmental concerns. In the last 3 years alone, more than \$2 MM has
25 been invested in extensive environmental studies...many of which are now

1 completed. Individual project studies range over the entire spectrum
2 of environmental concerns and are as diverse as transportation, control
3 of emissions, soils, wildlife, existing vegetation and revegetation,
4 water and community planning. One group of studies provides an
5 ecological inventory and impact assessment of the area affected by a
6 commercial plant. It is being done by an independent, interdisciplinary
7 ecological team, and covers aquatic, terrestrial, wildlife, scenic, socio-
8 logical, archeological and many other aspects to determine the effect on
9 the existing ecosystem. These studies will provide information which
10 any responsible industrial operation should have as input to a commercial
11 plant decision.

12 With this background, we at Colony have carefully reviewed the
13 Department's Draft Statement, and we congratulate the Department on a
14 sincere and excellent effort on a complex and far-reaching subject. In
15 a document as extensive as this, there are always areas that could use
16 additional clarification. Due to limited time, I will make only a few
17 highlighting comments here today...comments which will be supplemented
18 later with written detail. We suggest the following areas for review
19 and reinforcement in the Final Draft:

20 1. Water. On this subject, the Statement assumes that develop-
21 ment of a full-scale oil shale industry of approximately 1 million BPD
22 could increase the salinity of the Colorado River System by 1.4%¹.
23 Increased salinity need not occur with development of a commercial oil
24 shale industry. Such an industry could, in fact, improve the quality
25 of the Colorado River System.

1 The Statement figures were developed on the assumption that
2 water removed will be pure without containing salts. This does not
3 take into consideration several important factors.

4 First, a commercial plant, as a minimum, should operate on the
5 same basis as any other user whether municipal, agricultural or indus-
6 trial...and use water containing its proportional allied solids.

7 Second, commercial plants must be designed to utilize water with
8 maximum dissolved solids which occurs only during a few months of low
9 runoff cycle. A plant then has the capability during many months of the
10 year of accepting lower quality water than is contained in the river.
11 This is a target of opportunity--substituting low quality water in place
12 of higher quality river water--but it depends upon many things such as
13 a plant's specific location in relation to available low quality water.
14 However, from an ecological standpoint, this realization could maximize
15 utilization of low quality water, leaving in the stream the purest water
16 to enhance the downstream quality.

17 Third, almost one-half of the water required for a commercial
18 plant is associated with the moisturizing and disposal of processed
19 shale which, at least in the Tosco II process, can utilize low quality
20 water. So we have another target of opportunity...utilizing high saline
21 water from nearby tributaries or mainstream flows to enhance remaining
22 river waters.

23 Fourth, there is substantial evidence that increased future
24 industrial water usage in place of equivalent irrigation rights can
25 result in reduced salinity in the Colorado.

1 Fifth, salinity analyses assume that no water is available from
2 a mine or other sources. This is not the case, and indeed the Draft
3 Statement itself shows² that a first plant diversion could be as low
4 as 530 AFY, 1/10th of that used elsewhere in the Statement in calculating
5 an increase in salinity.

6 Let me conclude this point with a quick reference to water
7 consumption. Although by legal definition the figures given for a
8 proposed commercial plant are totally consumptive, from an ecological
9 standpoint plant diversions are far from being totally consumptive of
10 water. More than 50% of a plant's water use is continuously being
11 returned to the ecosystem through evaporation and other means.

12 2. Mine Safety. I suggest that the material³ on this subject
13 be completely re-evaluated. The reason being that the data given is
14 based solely on coal mine surface experience during the years 1960-1969.
15 They are based in part on many small out-moded mines and also occurred
16 prior to the development of strict Federal and state regulations. The
17 best answer to these figures is the Colony experience. We have engaged
18 in mining of shale since 1965. We have removed 1,300,000 tons of oil
19 shale. And we have had no fatalities and only one lost-time accident...
20 a broken ankle, back in 1966. This shows oil shale mining can be done
21 safely, and that fears in this area are unfounded.

22 3. Plant Air Quality. Just a brief comment here. Page I-58
23 of Volume I opens the question on the economic advisability of removing
24 sulfur from product gases prior to their use as plant fuel. Obviously,
25 with today's emission laws and regulations this is almost a moot question.

2 - Table III-6, Vol. I

3 - Page III-87, Vol. I

1 Any oil shale plant must comply with all existing regulations. There-
2 fire, necessary sulfur will be removed.

3 4. Dust Control. Colony's experience in crushing and con-
4 veying raw and processed shale in our Parachute Creek facilities
5 indicate the Statement's "fugitive" dust figures to be high.⁴ We are
6 confident contemporary techniques for enclosing crushing activities
7 will provide adequate controls on dust.

8 5. Regional Air Quality. There is a popular misconception,
9 Mr. Examiner, that a Federal leasing program, together with development
10 of private lands, could mean an immediate 1 million per day shale
11 industry. This is simply not the case. Substantial lead times are
12 involved. It is likely no more than one or two plants will be started
13 within the next few years. That experience--mechanical, economic and
14 environmental--will be fully reviewed before our plants begin. Commercial
15 oil shale plants represent sizeable investments somewhere between \$250 -
16 \$400MM depending upon plant capacity. The construction period alone
17 consumes two to four years, thus the region will have ample opportunity
18 to evaluate any significant danger to regional air quality. We feel
19 the Federal Leasing Program phased development together with Federal
20 and state laws and regulations on air quality will help avoid crisis
21 planning with all its potential for ignoring environmental constraints
22 if the decision to proceed is delayed until the energy crisis deterior-
23 rates further.

24 6. Special Land Use Areas. One of the mitigating measures
25 discussed⁵ is the exclusion of certain presently-designated special land

4 - Page III-50, Vol. I

5 - Page IV-2, Vol. I

1 use areas. I suggest, Mr. Examiner, there should be additional limited
2 areas placed in a permanent scientific reserve system. The best
3 representative stands of each major vegetation type should be preserved,
4 as should major aquatic and wildlife habitats, geologic and archeologic
5 sites of major importance. Setting aside unchanged a very small
6 percentage of surface lands containing ecological baseline areas will
7 provide invaluable reservoirs of original landscape against which,
8 among other things, the effect of the shale industry on the environment
9 can be measured.

10 7. Pipeline Alternatives. Any consideration of routes through
11 wilderness or roadless lands as defined in the Wilderness Act,⁶ and
12 through extraordinarily rough topography should be eliminated. But not
13 simply because of the cost factor. The potential for environmental
14 disturbance in overriding. Any criteria should include considerations
15 for the aesthetic impact, scientific value of the area, vegetation
16 recovery rates and effect on wildlife...as well as potential use of
17 Federal lands by the Public. The goal should be to blend the pipeline
18 right of way as completely as possible into the surrounding ecosystems.

19 8. Reclamation of Processed Shale. It is our experience, fully
20 demonstrated, that reclamation of processed shale disposal areas is
21 unquestionably feasible. Colony's vegetation investigations began in
22 1967 as soon as disposal product was available for this purpose. Under
23 the continuous guidance of research agronomists, we progressed from,
24 first, greenhouse studies into test plots on location to test several
25 alternatives anticipated in temperature, solar radiation, rainfall and
6 - 78. Stat. 890, 16 U.S.C.A., Sec. 1131

1 slope exposure. A broad range of grasses, and a few shrubs and trees,
2 have been investigated. These investigations indicate that a Tosco II
3 processed shale pile, properly revegetated, after a period of maintenance,
4 can be self-sustaining and as productive to wildlife and other elements
5 of the ecosystem as the natural soils of the area.

6 9. Plant Water Disposal. Commercial plants designed by Colony
7 will not discharge any process water into the surrounding watershed.
8 Rain or snow falling on the plant area will likewise be isolated and
9 returned to beneficial use in the process and isolated from entering
10 the watershed. Colony will support general regulations for industry
11 performance to operate responsibly within the water environment.

12 Let me say in summary I am somewhat unconfident with the
13 brevity of my remarks today. I want to emphasize my comments have been
14 general and are in no way meant to be exhaustive on any point. We will
15 detail separately in writing additional facts and supportive data which
16 will be helpful to the public and to the Department in preparing its
17 final statement.

18 Again, on the Colony participant companies, let me applaud
19 the Department's efforts and thank you for this time before you today.

20 MR. DAY: Call on John Tweedy, the Oil Shale Corporation

21 STATEMENT OF JOHN B. TWEEDY

22 MR. TWEEDY: Mr. Examiner, I want to thank you for the opportu-
23 nity to be here today.

24 My name is John B. Tweedy. I am appearing today as Executive
25 Vice President of the Oil Shale Corporation to comment upon the Draft

1 Environmental Statement for the Proposed Prototype Oil Shale Leasing
2 Program prepared under Section 102(2)(C) of the National Environmental
3 Policy Act.

4 So that my remarks may be understood in proper context,
5 I want to state for the record the interests and background of
6 the company I represent. The Oil Shale Corporation, whose trade
7 name is TOSCO may be more familiar to you, is a publicly held,
8 private corporation. It is the owner and licensor of the TOSCO
9 Process, a retorting process for the extraction of oil from oil
10 shale. As a participant in Colony Development Operation, TOSCO
11 and its coventurers have conducted extensive field operations
12 utilizing the TOSCO Process including the operation of a 1,000
13 ton-per-day semi-works plant and mine at Parachute Creek. These
14 activities have demonstrated the feasibility of the process and
15 developed satisfactory solutions to environmental and other
16 related problems. That operating experience which began in
17 1964 and included the mining of more than one million tons of ore by
18 TOSCO and its partners, is the basis for my remarks today.

19 Prototype Leasing Program: A New Concept in
20 Environmental Testing
21 The Proposed Prototype Oil Shale Leasing Program as set forth
22 in the Draft Environmental Statement embodies a totally new concept
23 in the development of public lands. Its object is to permit testing of
24 oil shale operations under strictly monitored conditions to determine
25 with certainty the environmental effects of commercial oil shale pro-
duction and to determine the adequacy of environmental controls. This

1 feature, which cannot be over-emphasized, distinguishes the proposed
2 oil shale program from any other Federal leasing program.

3 The testing will occur on carefully selected tracts which
4 represent less than one-half of one percent of Federal oil shale lands.
5 The opportunity for the State and Federal governments, public interest
6 groups, and industry to review the results of these commercial sized
7 operations will insure a high degree of protection for the public
8 interest. We approve this unique and pragmatic approach to public lands
9 development.

10 We believe that the Draft Statement has covered in remarkable
11 depth the impact of prototype leasing program. Its treatment of the
12 impact of a mature industry, by its very nature, must be less detailed.
13 This contrast emphasizes the very purpose for which this prototype
14 program has been devised, which is to develop data from which a more
15 accurate forecast of the impact of a large-scale industry may be drawn.

16 Comments on Draft Environmental Statement

17 Our partner, Atlantic Richfield Company, for itself and as
18 Operator of Colony Development Operation has already commented in some
19 detail on the Draft Environmental Statement. TOSCO concurs in and
20 adopts those comments and shares the view that the Draft Statement
21 displays a high degree of professional competence and thoroughness. We
22 think the Department should be commended for the quality of its work.

23 We are, however, concerned that the very thoroughness of the
24 discussion of possible environmental impacts in the Draft Environmental
25 Statement may give the erroneous impression to the casual reader that

1 many of the less desirable possibilities which are discussed may actually
2 occur. For example, if not read in conjunction with the remainder of
3 the Statement, in several places the Draft describes environmental impacts
4 which are physically possible, but which would not be permitted under
5 existing Federal and State laws and which can be adequately controlled
6 as has been demonstrated in oil shale operations and other conventional
7 industrial applications.

8 As an example, in Volume III (Page IV-32), it is stated that up
9 to 40 tons per day of fugitive dust might be emitted from each oil shale
10 processing facility. In fact, as Volume I (Page III-47) correctly
11 points out, control procedures could limit air emissions of dust to one
12 percent of the possible level discussed in Volume III. In addition,
13 Colorado air pollution control regulations would not permit the emissions
14 referred to in Volume III and dust control procedures used in oil shale
15 operations by Colony have successfully demonstrated that such regula-
16 tions can be met.

17 While other similar examples might be cited, because of the
18 time constraints upon oral testimony, I will not enumerate them at this
19 time. They are matters of detail involving minor discrepancies that
20 are almost certain to occur in any extensive discussion of a complex
21 subject. As previously indicated, ARCO and TOSCO are submitting, through
22 Colony, amplification of such matters together with a substantial amount
23 of related data based upon our operating experience. We hope that such
24 information will be useful to the Department in the preparation of the
25 Final Environmental Statement.

1 Mr. Tippit has pointed out today, and the representative of
2 Equity Oil Company has dealt at greater lengths with the apparent lack
3 of discussion of the Rio Blanco Project, and it's possible conflict
4 with oil shale development. I think it's worth stating here some of the
5 basic salient facts which characterize that potential conflict. Data
6 generated by the Bureau of Mines and presented in public hearings clearly
7 establishes that the energy reserves and the oil shale contained in the
8 Rio Blanco unit are 100 times the magnitude on a BTU basis of the value
9 of the gas reserves which will be tested by the Rio Blanco unit.

10 There are conflicts between the development of oil shale
11 reserves and the gas development through nuclear stimulation, only if it
12 is insisted that the nuclear stimulation project preceded the oil shale
13 development. Now the details of that program contemplate 280, I believe,
14 separate nuclear shots within an area of 140 square miles. This means
15 more than two separate detonations of three nuclear devices each, per
16 square mile. The conflict that becomes obvious when you consider the
17 impact upon the 300 million dollar facility situated close to that kind
18 of detonation; on the other hand, if the nuclear stimulation takes
19 place after oil shale, the recoveries can be as great as they were
20 originally, and can be conducted without any interference whatsoever.

21 Mr. Tippit commented on the conflict with oil and gas develop-
22 ment. This area has been the subject of exploration by conventional
23 means for many years. The AEC in its published statement, Equity Oil
24 Company, all have stated publicly and for the record that conventional
25 means of developing gas in the Rio Blanco unit are not now and never

1 have been feasible.

2 Now it may well be in the future there could be additional
3 liquid reserves, but in the many hearings and discussions on this subject
4 which have been conducted privately and publicly to date no one has
5 raised the issue of a potential conflict between the recovery of liquid
6 oil and oil shale development.

7 This subject, I'm sure, is one that can be profitably expanded
8 on in the final Draft Statement and, in this respect, I concur with the
9 comments of the earlier statements.

10 As a final comment, let me turn briefly from the adverse impacts
11 which, of necessity, must be considered in a NEPA statement, to the
12 potentially favorable impacts that can arise from oil shale development.
13 In addition to the benefits to national security, our balance of trade
14 and the clean energy source discussed by others, oil shale development
15 will maximize the use of otherwise low value lands and provide an
16 opportunity for the dispersal of Colorado's population. It will also
17 provide new jobs, increased incomes and a higher standard of living to a
18 region which is now substantially below the national average.

19 The Oil Shale Corporation has, as a matter of policy, viewed the
20 solution of environmental problems as being no less important than the
21 solving of technical process problems. Although neither the Draft
22 Impact Statement nor the Prototype Oil Shale Leasing Program to which
23 it is directed are perfect, yet in their design the Department has pro-
24 vided--perhaps for the first time in the economic history of man--a
25 rational system for the development of a new industry under controlled

1 conditions which will minimize undesirable environmental consequences.
2 This effort deserves our wholehearted support.

3 Thank you, Mr. Day.

4 MR. DAY: Thank you very much, sir.

5 Do we have a representative from the American Petrofina Company
6 of Texas?

7 STATEMENT OF JOHN MORAN

8 MR. MORAN: My name is John Moran, Jr., and I'm an attorney.
9 I practice in Denver and I appear here on behalf of American Petrofina,
10 Incorporated.

11 American Petrofina was incorporated in 1956, stock traded on
12 the American Stock Exchange and markets its products principally under
13 the name of Fina in 24 states, including Colorado, Utah, and Wyoming.
14 Fina's oil and gas production is from Arizona, Texas, Oklahoma, Kansas,
15 New Mexico, Wyoming, and Colorado. For some years American Petrofina
16 has been a leader within the energy fuels industry, in the installation
17 of facilities at its refineries to abate air and water pollution.

18 As the technology for air and water pollution control has
19 developed during the past several years, American Petrofina, with
20 approximately 8/10ths of 1 percent of the refinery capacity of the
21 United States has averaged the expenditure of approximately 1 million
22 dollars per year for air and water pollution control facilities.

23 Since 1968, Fina has installed systems for treating water and
24 removing sulfur, particulate matter in smoke, the vapor streams of its
25 refineries. Accomplishments on behalf of Fina demonstrate that it is

1 this kind of company that considers responsibility to carefully care for
2 and treat the environment. For the past 10 years or so, American
3 Petrofina has been interested in the development of synthetic fuels,
4 either or all tar sands, coal, or oil shale. Since 1967 the company has
5 retained the services of engineering consultants in Denver who have
6 assisted the company to become fully informed on the problems and
7 potentials of a shale oil industry, and evaluation of all factors avail-
8 able to it, leaves American Petrofina to conclude that the development
9 of a Shale Oil Industry should commence.

10 After the Department of the Interior announced the Prototype
11 Oil Shale Program in June of 1971, American Petrofina participated with
12 others in the functions of an exploration area of Piceance Creek Basin
13 in Colorado. Under such program, 9 wells have been drilled through the
14 oil shale section which has provided information related to oil shale,
15 assay values and volumes of oil shale, overburden and innerburden and
16 quality and quantity of ground water in the area. Preliminary analysis
17 of such data led American Petrofina to submit, with others, a nomination
18 to certain federal oil shale acreage in Colorado, in January of 1972.
19 Such tract is known as Tract CA, and was selected by the Department of
20 the Interior for further consideration under the lease program and
21 evaluation of the tract continues.

22 American Petrofina participated in the funding of an environ-
23 mental inventory study of Piceance Creek Area in Colorado. Such study
24 was prepared by investigation and adjustment and was made available to
25 the Department of the Interior at the time the tract nominations were

1 submitted in January of 1972.

2 American Petrofina has also participated in the funding of a
3 \$715,000 study of the Piceance Creek Basin. This study is being financed
4 jointly by the Federal government, the State of Colorado, and the Colorado
5 counties of Rio Blanco, Mesa, and Garfield and by private industry.
6 The studies are currently in progress and are scheduled to be completed
7 prior to the time a detailed development plan with lease tracts become
8 available or finalized.

9 There is before the Panel the Draft Environmental Statement for
10 the Proposed Prototype Oil Shale Leasing Program. The statement at
11 Page 8, Vol. II, substantially documents the Nation's present and future
12 energy requirements and the call upon the various major energy sources
13 in the near term, in the intermediate term, and in the long term
14 stretched from the near term, 1975, through the long term in the year
15 2000.

16 Recognizing that there are many factors to be considered in
17 forecasting further energy demands, it is that in the near term
18 intermediate and in the long term the oil and gas industry will be
19 called upon to furnish in excess of two-thirds of the nation's energy.
20 That may be documented by reference to Page 12 of Vol. II. But with ever
21 decreasing known source of supply occurring in reference to this require-
22 ment to furnish the energy, if one is to believe the forecasts in the
23 Statement, and there's no substantive evidence they are not true or that
24 we have at our disposal the means to alter the future outlook, it is
25 mandatory that we not only make intelligent use of what we now have but

1 that we provide for the future demand. Failure to do so will present
2 us face-to-face with an energy crisis. Some would say that the crisis
3 has already occurred; relying on the statement itself, the crisis is
4 imminent. Indeed, it is already known as cited in the statement at
5 page 13, Vol. II, that natural gas will be subject to supply limitations,
6 but the Statement on Page 39, Vol. II, is emphatic when it notes that
7 all of the Nation's excess crude oil providing capacity at the current
8 levels of import will be gone by 1973 at the present trend of consumption.

9 The decline in domestic oil and gas supplies are, of course, a
10 result of increasing demand and also result from lower discovery rates,
11 an integral part of the nation's systems undertaken to provide the
12 necessary reserves to assure a reliable energy source.

13 In applying for a lease of Federal oil shale acreage, the
14 industry, of which American Petrofina is a member, is seeking to provide
15 the Nation's demand. The implication of not developing oil shale as an
16 energy resource has been summarized by the Assistant Secretary of the
17 Interior, and if we do not get busy on the development of oil from oil
18 shale, I think we are going to see the cost of energy rise very rapidly.

19 Oil from shale can set the cost of energy in the United States,
20 it can put a ceiling on the price. What with American demand for fuels
21 and energy continuing to grow at the rate of about four percent per year,
22 an increasing portion of that demand now has to be met by foreign
23 imports of oil. This puts the United States in a deteriorating bargain-
24 ing position. This does not have to be when we have this much muscle in
25 oil shale, it's our muscle and time reflects it, as it will take 15 years

1 to develop a one million barrel a day industry.

2 The 15 companies which submitted nominations under the Proposed
3 Oil Prototype Shale Leasing Program also submitted, along with their
4 nominations, exploration data and environmental reports relating to their
5 individual choice of tracts. A significant accomplishment requiring
6 substantial sums of money. The Department of the Interior is to be
7 commended on the comprehensive and detailed analysis of this information.
8 Further, the Department's analysis of alternative sources of energy,
9 with the description of their projected impact on the environment indi-
10 cates a full appreciation of the energy situation.

11 As pointed out at Page 64, Vol. II, of the Statement, if the
12 current oil shale program continues, time will allow development of
13 methods to protect the environment; a delay or postponement could
14 result in a crash program which would not provide sufficient time to
15 evaluate effects on the environment.

16 American Petrofina considers the proposed Prototype Plan to be
17 an acceptable vehicle through which to begin the development of Federal
18 oil shale lands and thereby to effect a protection for the environment.
19 American Petrofina urges that the endorsement of the currently proposed
20 oil shale leasing program and the acreage directed by the Department of
21 the Interior to be leased thereunder be provided in accordance with the
22 plan.

23 On behalf of American Petrofina, gentlemen, I wish to express
24 its appreciation for allowing us to appear here today.

25 MR. DAY: Jorge E. Castillo, from the Sierra Club?

1 STATEMENT OF JORGE E. CASTILLO

2 MR. CASTILLO: Mr. Examiner, my name is Jorge E. Castillo,
3 and I'm appearing here today on behalf of the Sierra Club. We intend to
4 file a written statement setting forth in more detail the views that I
5 will attempt to express here.

6 First, we think that the action which is proposed with respect
7 to the development of oil shale is one that has far-reaching effects
8 not only so far as the states involved are concerned, but also insofar
9 as the National energy policy.

10 We think that by proposing this action the Department of the
11 Interior is, in substance, bringing about a commitment by the Nation that
12 we will seek to satisfy the energy needs in the 1980s and beyond out of
13 fossil fuels.

14 Initially what is proposed is a prototype program; supposedly
15 the prototype program is to make more precise determinations as to a
16 number of things, such as technology involved, such as the environmental
17 impact. Now what happens if the prototype were to disclose that the
18 environmental detriment is greater than anticipated? What other alter-
19 native courses of action there would be? No one has mentioned this and
20 it is not mentioned in the Draft Statement.

21 Since the time that we have today is limited, we merely would
22 like to point out some basic objections that we have to some of the
23 matters that are contained in the Draft Statement. First of all, in the
24 area which has to do with the alternative energy sources, there's a
25 short discussion in Volume II, at Page 187, as to other, cleaner energy

1 sources. These energy sources are dismissed as not being technologically
2 capable of supplying the additional fuel that is to be used in the 1980s.

3 Now from what has been said here today by a number of the
4 witnesses on behalf of industrial concerns and from a number of other
5 considerations, we have considerable doubt that the technology that exists
6 today is adequate to fulfill the projections that the Draft of the State-
7 ment makes; that is, we don't think by year 1985 the oil shale industry
8 will be in a position to produce the amount of oil that has been projected.

9 The proposal that has been made is to the effect that we are
10 going to be committed to look for that additional oil in the 1980s out
11 of oil shale, the tremendous amounts of money that will be spent, the
12 great environmental damage that will occur, are somewhat, to a lesser or
13 greater extent, discussed in the Statement. Under Section 1 and 2 of
14 the Act, we think that Congress intended--the Department of the Interior
15 in this particular case--should explore more meaningful alternatives to
16 the action that has been proposed, and we don't think a meaningful
17 alternative is merely to say that solar energy does not have, now,
18 the technology. We think that the Department of the Interior, because
19 of the nature of the commitment that would be made if this action is
20 carried out, that it should, in detail, explore what it would take for a
21 crash program designed to determine whether or not it would be feasible
22 to produce energy from solar sources.

23 We think that Section 102 requires the Department of the Interior
24 to, in detail, give a meaningful comparison between the environmental
25 impact than would flow from the development of solar energy sources, so

1 that one, either the public or the Department of the Interior, could
2 make a meaningful comparison between the environmental impact and the
3 cost on the one hand of the action which is proposed and the cost and the
4 environmental impact of getting energy from solar sources.

5 To us, this is one of the basic flaws in the Environmental
6 Impact Statement that has been prepared. We think also that there are
7 a number of other problems which are important and which perhaps, do not
8 lie at the very foundation of the action proposed, but which are
9 inadequately explored in the Statement.

10 For example, with respect to water, in Volume I, Section 3,
11 Page 39, there is a statement concerning the fact that there will be an
12 adverse environmental impact through decreasing water levels and partition
13 pressures on aquifers associated with the mine water; but there is
14 nothing said as to what the impact is, there's no statement made, no
15 investigation made here as to where, for example, what is the environ-
16 mental impact on agriculture, for example, of water which would be used
17 for oil shale purposes. There is hardly anything said about the contamin-
18 ation problem resulting from salt water on fresh water aquifers. It
19 merely says it could result but there's no intelligent, meaningful
20 statement that would enable anyone to make an assessment as to what the
21 effect of that contamination is going to be.

22 There's mention made in the Statement about the impact of
23 increased water use by oil shale development connected communities.
24 It's just merely mentioned, but what that effect is is not mentioned
25 anywhere; where that water is going to come from is not mentioned any-

1 place.

2 We think that these are material aspects of the environmental
3 effect of this proposal and we think that the gravity of the environ-
4 mental--of the Interior Department--is inadequate in terms of treating
5 those problems. We think that, generally, the Interior Department
6 should go back and re-examine each and every one of the items that has
7 been mentioned in the report and amplify so that a meaningful statement
8 as to what the impact is will appear in the next draft, and that after
9 discussing these items in detail, that a further opportunity be given
10 to the public to express their views concerning the Statement.

11 So, in summary, we think that it is important that a meaningful
12 alternative energy source be provided in detail, with estimates as to
13 cost, and secondly, that as to the items that have been recognized as
14 being part of the detrimental effect upon the environment, that further
15 elaboration is necessary and that the Interior Department should go
16 back and do that.

17 MR. DAY: Was your first reference to Volume II, earlier in
18 your talk? Would you give me the page of the statement to which you
19 referred?

20 MR. CASTILLO: Volume II, Page 187, under "Other Energy
21 Sources."

22 MR. DAY: Thank you.

23 Mr. Tom Stocker?

24 MR. CASTILLO: Mr. Stocker cannot be present today.

25 MR. DAY: Thank you. I'll call on Dr. Theodore Ellis, also

1 representing the Sierra Club.

2 STATEMENT OF DR. THEODORE ELLIS

3 DR. ELLIS: Mr. Chairman, my name is Theodore J. Ellis. I'm
4 an Assistant Professor of Economics at Adams State College, Alamosa,
5 Colorado, and I'm going to present a statement of the Sierra Club.

6 Mr. Chairman, I have recently completed a doctoral disserta-
7 tion for the Colorado State University on the various aspects of the oil
8 shale issue and, in this statement, essentially I'm trying to summarize
9 the conclusions I have reached in that study; however, the statement is
10 rather long. I'll try to summarize it, but I wish to have the statement
11 in full presented in the record; also a copy of my dissertation can
12 be reviewed at the Conservation Branch of the Denver Public Library,
13 if anybody is interested.

14 Much has recently been said about the existing or intended
15 energy crises; there are contentions that we are presently uncovering
16 the bottom of the barrel, of the United States rapidly becoming a
17 finished nation in terms of energy supplies. Nothing, Mr. Chairman,
18 could be farther from the truth. The United States is not approaching
19 economic exhaustion of any of its energy resources; we are, however,
20 faced with a rapidly expanded energy demand and growing problems of
21 supply. We have witnessed a shortage in increase of supply, environ-
22 mentally acceptable fuels and, as a result, energy issues have received
23 much attention and become national issues.

24 Within this framework it is said to meet the mounting energy
25 requirements we must develop oil shale, that the domestic petroleum

1 supplies must supplement with the synthetic group of fuels in the produc-
2 tion of our shale oil. Consequently, shale oil becomes a national and
3 regional issue which is very important, particularly in view of the
4 impending decisions concerning this resource.

5 A rational policy towards production requires that we be
6 fully informed about the consequences of alternative possibilities of
7 action, and to this effect, I'm going to concentrate on specific issues
8 concerning oil shale, particularly on the realities concerning the
9 physical extent of the oil shale resource. Is shale oil production
10 economically feasible? Is it presently environmentally viable?
11 Disregarding economics or environment, what will the potential contri-
12 bution of shale oil be to the potential future US energy requirements?
13 And what is the role of presently proposed leasing programs to this
14 effect and at the end what, in my opinion, constitutes a rational
15 approach or strategy to the shale oil issue.

16 Again, with the first point, it has been stated that the oil
17 shale deposits are indeed enormous. The United States Geological
18 Survey estimates that the oil in shale is at least 1,550 feet thick
19 and contains at least 15 gallons per ton, amounting to one and three-
20 quarter trillion barrels. Observers usually over blow the physical
21 availability of this resource and tend to speak of a multi-trillion
22 dollar resource whose development could be a bonanza of revenues to the
23 federal government and also the oil shale states involved; however,
24 according to present technology and present market conditions, only a
25 small amount of oil shale could be recovered, could be made available.

1 The United States Joint Survey indicates a figure of about 80
2 billion barrels, while the National Petroleum Council assumes a higher
3 quality of oil shale, 35 gallons per ton or more, believe only 20
4 billion barrels recoverable reserves could eventually become available;
5 thus, the potential realization of extensive revenues on the Federal
6 and State level is, at the present time, a vision.

7 Second, in terms of economics recent figures by the Bureau of
8 Mines and the National Petroleum Council shows that rates of return can
9 be considered only marginal or sub-marginal at best; it's not clear
10 to what extent this projection includes environmental protection costs.
11 It is known that oil shale development has the potential of extensive
12 side adverse effects, which must be taken into consideration, but at the
13 present time the environmental control technology has not been demon-
14 strated on a commercial scale. We do not know what constitutes a level
15 of adequate environmental safeguards and what it would cost to
16 implement it. Consequently, if you add to the very marginal prospects
17 of oil shale production, environmental protection costs, the economic
18 outlook for production from oil shale appears even more discouraging.

19 It has been said that voluntary action on the part of private
20 industry is enough to take care of the adverse effects on the environ-
21 ment; the main objective, however, of private industry is to enhance
22 its profits, its growth and its stability. To the extent that they are
23 interested in environment and environmental effects, they do so either
24 in anticipation of future controls or for public relations purposes.
25 In either case, would such interest be sufficient or would it require

1 monetary controls, mining regulations to protect dangerous and other
2 interests and other values involved in the area?

3 The environmental protection costs must become an integral part
4 of the oil production for oil shale, but disregarding economics and
5 disregarding environmental effects and assume that oil shale could be
6 developed at all possible speed, what could the potential contribution
7 of oil shale be to the future U. S. petroleum requirement? The
8 Department of the Interior projects an estimate of one million barrels
9 per day. This is a cumulative production capacity that could be
10 installed by 1985. If we compared this to projected petroleum demands
11 for environment of between 23 million barrels per day to 26 million
12 barrels per day estimated, presented respectively by the Bureau of Mines
13 and National Petroleum Council, the full potential of one million barrels
14 per day is only around 4 to 5 percent.

15 The National Petroleum Council appears even more pessimistic
16 and states that even if the economics and even if the governmental
17 attitudes are favorable, shale oil production can only amount to
18 400,000 barrels, which total demand is only well below 2 percent.
19 According to this, Mr. Chairman, shale oil neither is now nor is
20 capable of significantly contributing to the U.S. petroleum requirements
21 in the next 15 years.

22 The Secretary of the Interior has noted just recently by
23 stating oil shale cannot contribute significantly to our energy supplies
24 until after the 1990s, and maybe beyond the year 2000. What is the
25 purpose of the presently proposed leasing program to this effect? The

1 Department of the Interior proposes to offer 30,000, roughly 30,000
2 acres of rich oil shale lands presently under Federal control for the
3 purpose of stimulating research and development in oil shale. It is
4 a fact, however, Mr. Chairman, that lack of accessibility to the Federal
5 oil shale is neither a significant nor an important factor inhibiting
6 oil shale development at the present time. According to the National
7 Petroleum Council, deposits of the very highest quality under private
8 control amount to about 6 billion barrels and these are enough to
9 support fifteen 50,000-barrel oil-shale plants for their economic life
10 of more than 20 years.

11 In addition, the presently proposed leasing program does not
12 establish a mandatory production requirement. A company could obtain a
13 lease and hold on to it provided they pay what's required.

14 A former Department of the Interior official has estimated, in addition
15 to the bidding bonuses, it would cost an oil company about \$83 per acre
16 per year to hold onto the lease and do nothing. And so, for two
17 reasons first, the private deposits are quite extensive and the highest
18 quality and could be developed without a leasing program; and secondly,
19 the presently proposed leasing program does not entail any mandatory
20 requirements. For these two reasons, the prospects for success of this
21 program are rather dubious. It will result probably in more exploita-
22 tion of Federal oil shale lands but will not stimulate or speed up oil
23 shale developments in any manner.

24 In view of the above economics, straight economics, or marginal
25 or sub-marginal, and if we include environmental protection costs it

1 will become--it will even deteriorate farther. And the fact that oil
2 shale in any case will proceed at low speed, and will not be able to
3 deal with U. S. petroleum requirements. The present proposed leasing
4 program will not encourage or stimulate oil shale development. What
5 should a rational policy be according to my opinion? According to the
6 people I represent--

7 MR. DAY: Would you please sum up in 30 seconds?

8 DR. ELLIS: Essentially, I recommend government, direct govern-
9 ment involvement, either unilaterally or in cooperation with private
10 industry in building a commercial size oil shale plant. This will
11 enable the Government, first, to test economics and establish the value
12 of the Federal oil shale lands before they formulate a leasing policy.

13 Secondly, it would enable them to study the extent, nature, and
14 scope of the environmental effects and establish adequate environmental
15 protection standards, for any future leasing programs; and third, it
16 would allow the Government possibly to test alternative development
17 processes for oil shale, and by doing so, to close the important infor-
18 mation gap we now have before formulating and implementing a future oil
19 shale policy. That concludes my statements, Mr. Chairman. Thank you.

20 MR. DAY: You cited a number of statistics, I trust they'll
21 be documented in your exhibit?

22 DR. ELLIS: They will all be included in the Statement in
23 detail.

24 MAURY TRAVIS

25 Mr. Chairman, thank you very much for the opportunity of being

1 here. I have been waiting twenty-five years to make this presentation.
2 I am formerly with the United States Geological Survey, Conservation
3 Division, Mineral Classification Branch, District Geologist, 1952 to
4 1956, Northwest Region, Headquarters, Canada to New Mexico.

5 This is titled Air Pollution. The undersigned gave the
6 first scientific address on air pollution in Colorado, December 9, 1949,
7 before the Colorado Society of Safety Engineers, State Capitol Annex,
8 Industrial Hearing Room, Colorado Industrial Commission, 14th &
9 Sherman Streets, Denver, Colorado. This was updated April 8, 1966, at
10 their invitation before the Metropolitan Denver Safety Council
11 Engineer's club, 1380 South Sante Fe Drive, Denver, Colorado.

12 Title, U. S. Bureau of Mines, Oil Shale Refinery, Anvil Points,
13 Rifle, Colorado and mining operations above Bookcliff. The title of
14 this testimony is as follows: the myth of so-called, misnamed oil
15 shale. The undersigned personally visited the U. S. Bureau of Mines
16 Oil Shale Refinery and mining operations at Anvil Points near Rifle,
17 Colorado by chartered Monarch Airlines, October 2, 1947, in company
18 with sixteen engineers and geologists representing the American
19 Institute of Mining and Metallurgical Engineers. Thus, with his
20 background, 1952 to 1956 as District Geologist, U. S. Geological Survey,
21 which included oil shale operations Canada to New Mexico the under-
22 signed has watched developments of this natural resource from 1947 to
23 1972, some twenty-five years.

24 In addition, I have had 45 years continuous background in the
25 liquid fuels petroleum industry beginning with the year 1926,

1 representing three major oil and gas companies, dozens of independent
2 oil operations, also, the Federal Government with the Federal Power
3 Commission and the U. S. Geological Survey.

4 Nomenclature of So-Called Misnamed Oil Shale

5 So-called, misnamed oil shale is not oil, not shale and
6 not commercial. As the undersigned reported September, 1969, before
7 the Rocky Mountain Association of Geologists in a newsletter, also
8 mentioned in a public address on August 10, 1968, in a meeting before
9 the Rocky Mountain Association of Geologists in Denver.

10 Oil Shale or Sale Oil

11 Nonmarine microscopic aquatic lake algae deposits in limestone,
12 not shale, although containing hydrocarbons are more correctly termed
13 a "kerogen," from the Greek, meaning waxy substance. This waxy
14 algae when distilled in refinery operations, necessary at the site
15 of mining operations, is solid at ordinary surfaces. This is liquid
16 only at high temperatures, ranging to 900 degrees Fahrenheit,
17 requiring separation of liquid hydrocarbons from the waxy algae. Thus,
18 there is no relation between the nonmarine aquatic lake algae, the so-
19 called misnamed oil shale or shale oil and the true oil or petroleum of
20 marine origins, which is the lifeblood of national and inter-
21 national petroleum commerce, produced naturally at the well, with or
22 without associated gas, available immediately for pipeline or other
23 transportation to distant refinery sites. Furthermore, so-called oil
24 so-called oil shale or shale oil is not competitively commercial with
25 liquid marine fuel oil discovered in 1859 in Pennsylvania and 1862 in

1 our own Florence, Colorado. At no time has shale oil hydrocarbons been
2 a part of domestic petroleum production and international operations
3 exist only as a subsidized, costly substitute where true marine
4 natural oil is not available in sufficient quantities such as in
5 Scotland, Australia, and Brazil.

6 Water

7 Costly substitute, oil shale or shale oil requires enormous
8 quantity of water which is not available in semi-arid Western Colorado.
9 This was confirmed on April 5, 1970, by the Denver Research Institute.

10 Drought

11 A catastrophic global drought, 1971 to 1977, is now in
12 its second year exemplified by the worst drought in 100 years in
13 Soviet Russia Creating its worst agricultural disaster in modern
14 times, forcing the USSR to purchase one billion dollars grain from
15 the U.S. which had its own drought beginning in 1971 in the Southern
16 States, Florida to California, somewhat further south of the
17 wheat region and it would appear that that drought condition will
18 peak sometime in about 1975 as predicted by the Smithsonian Institution
19 there is no hope whatever for a viable substitute such as Oil Shale
20 before 1980. This would be after the drought measures had been
21 alleviated and restoration was accomplished in the very late
22 1970's.

23 Thank you very much for the opportunity to make this
24 presentation.

25 MR. DAY: Thank you. I think this is a good time to take

1 an hour off but I would like to add before we do that that there are
2 additional people who have applied and who just wrote us a letter
3 stating that they would like to testify and we don't know whether
4 they will show up. We will wait until this afternoon and see what
5 happens. At this time we will recess and we will reconvene at 1:00
6 o'clock.

7 (Whereupon, at 12:00 o'clock noon the hearing was recessed
8 to be reconvened at 1:00 o'clock.)

9 AFTERNOON SESSION

1:30 p.m.

10 MR. DAY: The Hearing will now come to order.
11 Call on John W. Rold on behalf of the Colorado Geological Survey.

12 STATEMENT OF JOHN W. ROLD

13 MR. ROLD: My name is John W. Rold. I am State Geologist
14 and Director of the Colorado Geological Survey and speak for that
15 agency. The Department of the Interior is to be complimented for
16 an excellent analysis of the potential oil shale development and its
17 possible impact on the environment. In our job, we review many 102
18 Statement by numerous organizations, and this is one of the best we've
19 seen. Obviously, from the comments made today, though, this statement
20 is not perfect and it would probably be impossible to write one
21 acceptable to all points of view this side of heaven. To our knowledge,
22 this is the first determined effort to evaluate and minimize the
23 environmental effects of a major industrial development prior to the
24 inception of that development.

25 I have only two points to make today about the environmental

statement. First, the casual reader or one who's not familiar with the area may, because of several comments, get the somewhat distorted impression of just what the "oil shale country" consists of. The photos on pages II-41, 42 & 43 (Vol. I) of Trapper's Lake, above Timberline primitive areas and high country snowmobiling. Certainly these are not pertinent to the question at hand and are misleading. Similarly, the recitation of recreation potential in Rio Blanco County (II-88) applies to an area completely outside the oil shale area. The recitation of fishable waters and trout streams on pages II-28, 29, 31, 32 & 33 is also not pertinent to the problem. They will mislead the reader unless the statement should also point out that only a few miles of small streams in the oil shale region contain fish and that even that habitat would be little affected by the proposed action. On page II-25, inclusion of moose habitat for the region conjures an erroneous impression of the area. Figure II-14 seems to refute the statement. The wildlife habitat maps II-9, 10, 12, 13, and 14, are difficult to use, even for one used to using maps, and cover considerable area which is not pertinent to the question. Without careful plotting of areas by the reader, they too are misleading. I would suggest redrafting of that material at a more suitable scale, showing the oil shale outcrops and the 6 sites in question in the 102 Statement. The citation concerning Rocky Mountain sheep and bison on page II-75 should be verified and qualified.

In describing the aesthetics of sites Ca & Cb, the roads and man's past and present activity is definitely understated. Roads

1 and vehicle trails extend along nearly all ridges and valleys. Much
2 of tract Cb has been chained to destroy the pinon & juniper trees.
3 Even the air photos and topographic maps II-4, II-6, II-7 & II-8 give a
4 truer impression than the discussion. Usage of the term "semi-
5 wilderness" on pages V-2, V-5 and elsewhere to describe the area
6 would stretch most people's definition of term.

7 Secondly, although on-going studies are briefly mentioned
8 on page I-74, 75 (Vol. I), it should be stressed that considerable
9 additional information will be available for timely use by the
10 regulatory governmental agencies and the industry itself. A fuller
11 discussion of these on-agency studies should allay the fears of many
12 citizens.

13 In water, for example, the USGS is not only evaluating
14 possible sources of surface and subsurface water as to location,
15 quantity and quality, but is investigating the possible impact of
16 underground water on the various mining operations, and the impact
17 of the entire development on the waters.

18 In revegetation and rehabilitation, Colorado State University
19 is not only working on the difficult problem of revegetating spent
20 shale, but on the revegetation and stabilization of all disturbed
21 areas, including the plant sites themselves when they have outlived
22 their usefulness.

23 Thorne Ecological Institute is making an environmental inventory
24 or a baseline of present conditions and an independent evaluation
25 of the environmental impact of each and all operational facets.

1 A Regional Oil Shale Planning Commission in 3 counties
2 has been setup, and is deriving mechanisms for intelligent decision
3 making to accomodate expected population growth and socio-economic
4 pressures which will result from oil shale development.

5 Funding for these studies being coordinated and administered
6 by the Colorado Department of Natural Resources amounts to over
7 \$700,000, and these funds are being provided on approximately one-third
8 shares by the Federal government, the State of Colorado and private
9 oil industry. Each of the studies will increase greatly the
10 considerable body of knowledge now available.

11 MR. DAY: Thank you.

12 I now call on a representative of the Colorado Rivers Council;
13 is there a representative from the Colorado Rivers Council present?

14 (No response.)

15 MR. DAY: The Sportsmen's Association, a representative from
16 the Colorado Sportsmen's Association?

17 (No response.)

18 MR. DAY: Mr. Richard Ward, Colorado State University?

19 STATEMENT OF RICHARD T. WARD

20 Professor of Plant Ecology

21 MR. WARD: The report that I will give was prepared jointly
22 with Doctor Ralph L. Dix, also a Professor of Plant Ecology, and
23 William Slauson, Plant Ecologist, from our institution.

24 If oil from the shale is so valuable to us we should be
25 willing to pay for it. Colorado (and Wyoming and Utah) should not,
however, be expected to underwrite this energy bill for the rest of

1 the U. S. The bill will be partly in the form of a devastated landscape--
2 an unfair subsidy to be paid by Coloradoans and her neighbors.

3 If it is intended that the 3-volume statement under
4 consideration serve as a guideline for the reestablishment of
5 vegetation -- that's what I'll speak to today -- in the oil shale area,
6 one can only comment that it is totally inadequate. It is not clear
7 what should be put back where, how to put it back, nor how to monitor
8 the success (or lack of it) against a standard.

9 A necessary first step in a reclamation program is to provide
10 an accurate and understandable picture of the existing vegetation
11 as it blends into the landscape. This draft statement is so diffuse
12 and haphazard in this regard as to preclude any possibility of an
13 adequate revegetation effort.

14 Let me focus on two critical failings:

- 15 1. The superficial treatment of vegetation
16 types and how these types fit into the
17 landscape; and
- 18 2. The inadequate structural characterization
19 of the vegetation.

20 First - the vegetation types -

21 For the Colorado oil shale region the statement lists three
22 primary vegetation types, and five secondary types. The three
23 primary types are: 1) Mountain Browse; 2) Pinyon-Juniper; and
24 3) Sagebrush. Let us consider the first of these -- Mountain Browse.
25 Is that to mean service berry, mountain mahogany, rabbit brush, oak --

1 and a few others? It doesn't take a trained eye to see in this region
2 the well-defined species-habitat relationships. This is in contrast
3 to a loose mixture of shrub species which one would infer. "Mountain
4 Browse" is a very complex thing, as most deer hunters of the area can
5 tell you.

6 There are several factors which contribute to positioning
7 of shrub types on the slopes. Steepness of slope, instability,
8 directions of slope, position on slope with respect to drainage
9 patterns, and elevation are good examples of factors which govern
10 the success of species and communities. For example, at several places
11 along Parachute Creek a change in slope of a few degrees produces a
12 change in vegetation visible for a great distances. Also, change in
13 exposure of a few degrees yields a change in vegetation as great as
14 that between a shrub and grass community. None of these factors is
15 more than briefly spoken to.

16 Think also of Pinyon-Juniper as a type. This is a standard
17 type that everyone recognizes -- but for the area we're talking about
18 it is an inaccurate and misleading designation. In the Piceance Basin
19 there is very little Pinyon! Probably for good environmental reasons.
20 If the environment is in fact not suitable for pinyon it makes a little
21 sense to spend 60 percent of your budget trying to reestablish pinyon
22 and 40 percent for juniper -- which is about what any reasonable person
23 would do using "Pinyon-Juniper" as a reference.

24 To mention one other type, a secondary type, the "Broad-leaf
25 Tree" type. Do you want to guess whether that is to indicate aspen in

1 the higher elevations, or willow and box elder along the lowland
2 stream courses? They are not differentiated, but obviously they are
3 associated with very different habitats.

4 The best approach to understanding reclamation needs is to
5 work out a system of environmental gradients and associated vegetation
6 types. When new habitats are created from oil shale activities, it
7 will then be possible to know what fits best and where. There is no
8 format for this approach in the present document.

9 The second major point has to do with structural
10 characterization of vegetation. Naming a community doesn't describe
11 it -- in fact, it often leads to erroneous visual impressions which
12 then lead to bad decisions. Listing species helps, but an essentially
13 complete display of component species with the presentation of
14 quantitative data on importance is required for good decisions.

15 Vegetation is a complex feature of the landscape, with
16 vertical and horizontal spacing characteristics, plant size and shape
17 differences, age and number attributes, and so forth. It has form and
18 dimensions. Detailed information of this sort is an essential part of
19 a reference base line. The report is devoid of such information.

20 How important are the guidelines I've discussed? They are
21 important enough that unless followed the oil shale area cannot be
22 reclaimed.

23 The destruction of this landscape is an unreasonable
24 and unnecessary price for the people of this region to pay. It should
25 not and need not happen.

1 MR. DAY: Thank you. Bruce Hamilton, Colorado State
2 University Environmental Corps.

3 STATEMENT OF BRUCE HAMILTON

4 MR. HAMILTON: My name is Bruce Hamilton and I live at
5 310 Peterson Street, Fort Collins. I am a student at Colorado State
6 University in the College of Forestry and Natural Resources and on
7 the Board of Directors of the Colorado State University Environmental
8 Corps (known as ECO). During the last year I have headed a group of
9 ECO volunteers interested in studying possible oil shale development
10 in Colorado. While I do not speak for all members of ECO, I shall try
11 to articulate what I believe to be the opinion of most members.

12 ECO feels that oil shale deposits in the Green River
13 Formation could be developed with a minimum of environmental damage.
14 However, judging from the Draft Environmental Statement, it seems very
15 unlikely that the environmental damage will be minimized. We would
16 like assurances--more than we have at present--that the actual or
17 possible harmful effects of oil shale development are minimized, even
18 if additional costs are incurred or if the leasing program is postponed.
19 ECO is not against oil shale development, but we are opposed to this
20 crash program.

21 We feel that adequate social and environmental planning has
22 not taken place. We feel that the environmental costs have not been
23 objectively investigated nor have sufficient attempts been made to
24 minimize these costs. We feel that the alternative of no development
25 has been considered superficially--as a part of a meaningless exercise

1 of only appearing to satisfy NEPA's requirements.

2 ECO plans to raise specific questions about the content of
3 the draft environmental statement in our written testimony.

4 At this point in time, we would like to address ourselves
5 to the question of public policy. After we have heard arguments for
6 and against oil shale development, after we have heard estimates
7 of economic success and projection of environmental deterioration,
8 the decision will be a political one. Air pollution specialists,
9 mining engineers, wildlife conservation officers and other "experts"
10 can provide excellent information on which to base a decision; but from
11 some other sphere of influence we must raise the more elusive questions
12 involving qualitative aspects of life, intangible values, public
13 interest protection and ethical questions about man's role on this
14 planet. The final decision about whether or not a public natural
15 resource shall be used, by whom and under what restrictions must
16 ultimately come from a consideration of both the technical experts
17 and the sensitive public.

18 The general consensus of the technical experts who put
19 together this statement is that oil shale development will have a
20 profound adverse impact on the environment of the states involved.
21 The Department of the Interior suggests that this impact, however, can
22 be accepted in view of the need for an industrial potential of one
23 million barrels of oil a day, which could be produced by 1985. What
24 the authors fail to point out is that as long as satisfying energy
25 demands is a top priority of our government, no environmental cost

1 can ever be too great! This attitude is not consistent with the
2 NEPA (Sec. 101.b.3) which states:

3 "...it is the continuing responsibility of the Federal
4 Government to use all practicable means, consistent with other
5 essential considerations of national policy, to improve and coordinate
6 Federal plans, functions, programs and resources to the end that the
7 Nation may--...attain the widest range of beneficial uses of the
8 environment without degradation, risk to health or safety, or other
9 undesirable and unintended consequences."

10 In the case of the Colorado lands, evidently because the
11 Piceance Basin is not as scenic as the high mountain regions of
12 Colorado and because our population's hunger for electrical power is
13 so great, this project will not result in enough "degradation" to
14 require a more ecologically sound program of development.

15 ECO contends that as long as our government considers only
16 selected human values and selected human desires, there is no stopping
17 the escalating exploitation of our public lands. Only when we can
18 achieve a less anthropocentric and profit-oriented view of the earth,
19 will we realize that the Piceance Basin is not a wasteland that can
20 accept any insult, but a delicate natural system whose natural treasures
21 are not presently fully appreciated by man. Perhaps the Piceance Basin
22 will never be of great use to man. Perhaps this is as it should be

23 I spoke before about how ECO feels this is a crash leasing
24 program. ECO believes that all the problems should be recognized
25 and resolved before we lease our public lands. As Dr. Barry

1 Commoner says in his book Science and Survival: "Like the
2 Sorcerer's apprentice, we are acting on dangerously incomplete
3 knowledge. We are, in effect, conducting a huge experiment on our-
4 selves."

5 In Volume II, page 65, of this draft environmental statement
6 on oil shale, the same point of view is expressed. The report states:
7 "By their nature, crash development programs frequently sacrifice
8 environmental considerations and regional planning to technologic
9 expediency. The balanced progress needed to resolve the complex inter-
10 relationship between the environment and technology is denied and
11 orderly development is not possible."

12 This is the fear that ECO wishes to express.
13 Evidently, we differ with the government on what constitutes a "crash"
14 program.

15 To illustrate one reason why we feel this is a crash program,
16 I refer you to pages 74 and 75 of Volume I, Section I. Here, the
17 report emphasizes that additional research is required and that the
18 details of these studies have been developed, but that they will not
19 be complete for two years. Why should we be asked to lease our public
20 lands when the environmental data that should be accompanying the
21 decision making process is still not in hand? We should not let oil
22 shale development proceed to the point where environmental damage
23 can be conclusively demonstrated; instead, we should carefully plan
24 out a sensible and ecologically sound plan of action. The burden
25 of proof should be on the developer, that his actions will not

1 cause any unnecessary harmful alterations. But, here we face the
2 problem of what is "harmful." Dr. Lawrence Hamilton, an ecologist at
3 Cornell University, describes this problem of definition as "the nub
4 of the public interest," and states, "it is essentially a value
5 judgment, and should not be left to any user of resources whose
6 planning revolves around profits..." Hamilton goes on to suggest that
7 harm should be judged in terms of "quality of life." But, how do we
8 measure quality of life? Should we measure it in kilowatt hours per
9 capita, or in clean air and open space?

10 Presently, the demand for energy is growing at an exponential
11 rate. Energy supply is not keeping up with this demand. Our government
12 believes that this gap is widening and will continue to widen unless new
13 sources of energy like shale oil are developed. ECO believes that the
14 wrong energy policy is being pursued by the government. Energy
15 suppliers cannot and should not attempt to meet projected demands at
16 the expense of our national environment. Rather than attacking the
17 earth to reap still more fossil fuels, we should attack the roots
18 of the problem--the social trends and institutions that misuse our
19 present energy production. We must realize that our earth's resources
20 are finite and that we cannot meet an insatiable demand.

21 As Dr. Alfred Etter, a naturalist at the Morton Arboretum has
22 written, "We each demand too much. It is our demands that destroy us,
23 that keep the trucks roaring and the jets rocketing, and the giantism
24 proliferating."

25 This should be the role of our government: to lead the way

1 in cutting down on needless waste and demand. Page 71, Volume II, of
2 this statement spells out the alternative: "To reduce energy demand by
3 the equivalent of the projected 1985 shale-oil production would entail
4 reduction of energy consumption from petroleum by an estimated 4.2
5 percent." Although well-stated, this alternative is pursued no further.

6 It should be the national energy policy of the United States
7 government not to encourage further exploitation and careless use of
8 resources, but, to protect our resources by devising alternatives
9 which provide an ecologically sound future. I would be extremely
10 surprised if a determined federal effort could not cut down on
11 petroleum consumption by 4.2 percent before 1985.

12 Energy demand is growing, but so is the demand for
13 environmental quality. Power generation insures comfort and
14 convenience, environmental quality insures mental health and physical
15 survival.

16 I raise these larger questions of man's survival and attitude
17 toward the earth because I feel that these questions are, as a rule,
18 ignored. True, this is only one government leasing program of six
19 tracts, but the incremental effect of one dam here, one strip mine
20 there, and one leasing program there must be analyzed. I see no better
21 time to raise these questions than right now. Man cannot afford to
22 lay waste any more of his life support system. The growing list of rare
23 and endangered or extinct plants and animals and the growing scarcity
24 of natural resources should be an indication to man that he, too, may
25 soon join the list of endangered species. Man is not immune. In The

1 Limits of Growth, the Club of Rome has spelled out the dangers for
2 man. We must heed their warning, for the benefit of man and all other
3 inhabitants of this planet. We have only one earth.

4 MR. DAY: Myron Corrin?

5 STATEMENT OF JEFFREY M. TODD

6 I'm not Dr. Corrin. Dr. Corrin had an appointment and will
7 not be able to be here until this afternoon and I will take his slot
8 and he will switch with me.

9 Why has an impact statement been drafted and leasing scheduled
10 before thorough investigative research has been completed?

11 The Colorado Wildlife Division employs the most competent
12 wildlife professionals in the State, yet they have had little
13 opportunity to reveal their research results on oil shale-wildlife
14 impact. In a development project that will seriously affect 10-20
15 percent of Colorado's mule deer population and will seriously alter
16 migration routes of the world's largest migratory deer herd, I question
17 why the Division has gone unheard or unheeded.

18 It is one thing to merely state, as the oil shale impact
19 statement has, that there will be effects on wildlife, and it is an
20 entirely different thing to delineate the exact impact of those effects.
21 The impact statement fails to bring out those effects because there has
22 been no time to complete and evaluate necessary wildlife research on the
23 proposed lease sites. A wildlife inventory of the areas, the most basic
24 of wildlife research, has not even been completed. What will be the
25 specific effects of migrational route disruption on mule deer? Will

1 the animals adapt to alternate routes? Who chooses alternate routes -
2 the deer themselves or presumptuous man? How will federally protected
3 raptorial bird populations be affected? How will increased air
4 pollutants in relation to the predicted night temperature inversions
5 affect wildlife populations? The point here is that the true impact
6 of oil shale development on wildlife or any other resource cannot fully
7 be evaluated from vague generalities!

8 No specifics have been set forth in the impact statement
9 relating hunting-recreation to the overall aesthetic and monetary
10 economy of the Piceance region. What is a deer or an elk or an eagle
11 worth to the people who have never seen one but would on some future
12 occasion visit the Piceance Basis to do so? After all, this also is
13 their public land. Once again, merely stating that a loss will occur
14 is not enough. How great a loss will occur? Exactly how many man-
15 recreation-hunting days will be lost as a result of oil shale
16 development?

17 Escrow bonds of \$500.00 per acre are mentioned in the impact
18 statement. Is an acre which will be irreversibly destroyed because
19 of high grade oil shale lying underneath to be given the same monetary
20 value as an acre which can be restored? Does this \$500.00 figure
21 reflect the going cost of total restoration per acre? Does this figure
22 reflect the cost of the loss of wildlife per acre? Does this figure
23 reflect the restoration cost per acre 20 years hence or even ten years
24 hence? Does this figure reflect the dollar loss per acre lost from
25 local economies? What does this figure reflect???

1 In summation, why has this impact statement been drafted
2 before research results have been evaluated? Why is this impact
3 statement vague and ill-defined? Why hasn't proper time been allotted
4 to answer the multitude of specific questions concerning the impact
5 of oil shale development on wildlife and all related natural resources
6 on our public lands? How can the impact of oil shale development on a
7 dynamic living environment be evaluated by a static impact statement?
8 Are we to launch into a project of this magnitude with this much
9 potential environmental destruction without first knowing the exact
10 results of its outcome?? These questions must be answered knowledgeably
11 before this Environmental Impact Statement adequately fulfills its
12 title. In my opinion, this has yet to be accomplished.

13 ALLEN STOKES

14 MR. STOKES: Mr. Hearing Examiner, ladies and gentlemen. My
15 name is Allen Stokes, giving this statement for Kay Collins, President,
16 the Denver Audubon Society. She can't be here today because she is not
17 able to get away from work.

18 "Why not let the oil companies mine their own land rather
19 than the public land? In its Environmental Impact Statement the
20 Department of the Interior poses the alternative to the prototype
21 leasing program of no development of public oil shale lands. However,
22 Interior does not discuss this alternative in a meaningful manner. It
23 admits that at least three tracts in private ownership are large
24 enough to support commercial operations, but says that the Department
25 cannot assess their commercial potential nor willingness of the oil

1 companies to develop them. Why cannot Interior assess these
2 possibilities? The National Environmental Policy Act of 1969 requires
3 Interior to assess this alternative. Why can't Interior assess the
4 commercial potential of the private lands when other persons have
5 made such an evaluation?

6 Private holdings contain high quality deposits that can
7 support commercial size operations. The National Petroleum Council
8 has recently estimated that 17 billion barrels of oil could be
9 recovered from high quality, privately held deposits. (Oil shale
10 averaging 30 gallons per ton at least 30 feet thick is considered
11 high quality.) At least six billion barrels considered as "prime
12 reserves" (35 gallon per ton shale at least 30 feet thick) that can
13 be recovered through underground mining would support a maximum
14 production of 800,000 barrels per day for 20 years.

15 It is apparent that in terms of resource adequacy alone,
16 development could begin on privately held deposits. As Charles H. Prien,
17 head of the Chemical Division at the Denver Research Institute, has
18 noted: 'There is sufficient shale under private ownership for
19 initiation of a shale industry by private capital.'

20 If the oil companies mined on their own land, the 50,000 acres
21 needed for mining on the six tracts would be spared destruction. The
22 recreational uses, the solitude, and the aesthetics would remain un-
23 spoiled. If oil shale proves commercially productive on private land,
24 then further mining on public land could be considered. Although
25 solutions to environmental problems should be learned before mining

1 begins, a period of mining on public land would give time to learn
2 how to avoid harm to the environment. The companies could possibly
3 learn how to prevent pollution of underground water or whether they
4 must pump in water from the Colorado River, and whether they can
5 dispose of waste oil shale rock by means other than by filling the near-
6 by mountain canyons and whether native shrubs and grasses can be grown
7 over areas where waste oil shale is dumped. These are critical areas
8 of environmental concern where there are many unanswered questions.
9 Perhaps solutions could be found while mining on private land. If
10 answers are discovered, and future mining is to occur on public land,
11 much damage to the public land could be avoided. The public land need
12 not be the guinea pig.

13 My second question involves government income from the
14 oil shale leasing program. Government income from the leasing of the
15 oil shale lands will be minimal compared to the potential income of
16 the oil companies. Government, the landlord of the public lands, will
17 receive money from bids for the lease tracts, rent, and royalty pay-
18 ments. Initial income will be from the bids. Income from this source
19 is speculative because it is not known how severely the companies will
20 compete against each other for the leases. The government should have
21 some minimum bid requirements. The second source for income is the
22 rentals. They are set by the Mineral Leasing Act of 1920 at 50 cents
23 per acre. This seems extremely low compared to the cost of renting
24 or buying private land. In the 1960's when oil companies were buying oil
25 shale land, prices were about \$2,000 an acre. At this price a lease

1 tract would sell for \$10,240,000. Rentals from a lease tract will
2 be only about \$51,000 over the 20 year period of the lease. After 20
3 years the value of the land to the government may be minimal because
4 it has been partially destroyed by oil shale mining. In effect, the
5 government will have sold land worth over \$10,000,000 for \$50,000.
6 The government must reassess the rentals established fifty years ago in
7 light of the current escalated values of land. A third source of
8 revenue from oil shale is the royalty payments. The Department of the
9 Interior has proposed royalties of 12 cents per ton of oil shale which
10 works out to 17 cents per barrel of oil produced from 30 gallon per ton
11 oil shale. This is about a 1/20 royalty rate based on a selling price
12 of shale oil of \$3.20 a barrel. This compares to a 1/8 royalty rate
13 for oil leases. Why has Interior proposed these low rates?

14 Under the Mineral Leasing Act of 1920 royalty payments go
15 10 percent to the United States Treasury, 52 1/2 percent to the Bureau
16 of Reclamation and 37 1/2 percent to the state of the lease tract.
17 More of the royalty pie should go to the Interior Department to help
18 pay the cost of restoring the lease tract when mining is completed.
19 Even though the lease provisions require the oil companies to
20 revegetate the land, the companies could refuse with the penalty only
21 \$500 per acre of land disturbed. The companies may well forego this
22 bond because the cost of revegetation would be greater. Interior,
23 unless it had money to rehabilitate the lands, would also probably
24 fail to do so because of the high cost." Thank you very much.

25

RICHARD SPEED

1 MR. SPEED: Members of the Board, ladies and gentlemen.

2 My name is Rick Speed and I work for the Environmental Action of
3 Colorado. Our group has had considerable interest and has done
4 considerable research into the energy situation in this country.
5 Today, I would like to thank you for allowing me to spend a few minutes
6 with you and share some of the results we have had.

7 First of all, I am not a lawyer or a politician and so I
8 am really not qualified to speak on the legal or political aspects
9 of the question but I would like to compliment Mr. Stokes on his
10 presentation and state that I also cannot understand why the oil
11 companies can't go ahead and prove their technology is feasible
12 on their own land before they ask the Government to lease public
13 treasures at a cost which to say the least is nominal.

14 Secondly, as an environmentally concerned citizen, I would
15 like to comment on some of the areas of environmental impact of a
16 large scale oil shale development. The first area I would like to
17 comment on, is water. As I am sure you are all aware, this is a semi-
18 arid region. We are very short of water, yet the proposed development
19 would use massive amounts of this scarce supply of water. When that
20 is considered in conjunction with the North Central Power study which
21 would also use massive amounts of scarce water supply, you can see
22 this whole area is going to be very short on water and if all of the
23 development, if a full scale development of local oil shale and the
24 North Central Power study will not be possible. And, even if it was,
25 all of the rest, every major river would be dammed, destroying

1 fantastic farming lands and wilderness areas. There are other
2 problems in the area of water. They include the high salinity of the
3 Colorado River which is present. Development of oil shale would
4 make immeasurably worse through the leaching of solids and disturbing
5 the channelization of rivers, and bringing water into develop the oil
6 shale. There is also the problem of decrease water flow to the lower
7 Basin States which is very critically low. We can hardly meet our
8 treaty obligations to Mexico in this area and the salinity requirements
9 are very questionable right now. There is a problem as to the disposal
10 of the water that is used in the processing of the shale. The
11 second area I would like to comment on is the air. Most of the air
12 in this area is clean now. It is beautiful and I don't feel that we
13 should allow any degradation in this area. It is some of the last
14 clean air in the country and any degradation is unacceptable and I
15 don't think you can carry out this type of development without serious
16 degradation of the air.

17 The third area I would like to comment on and next in
18 importance to water is the land. We still don't know how the shale
19 is going to be obtained, whether it's going to be room and pillar,
20 strip-mined or in situ. If it was strip-mining, of course, we would
21 be trading beautiful mesa country for basically a parking lot. And,
22 even if it is mined with room and pillar operation, because it expands
23 we would still be left with tons and tons of spent shale every day,
24 filling in the beautiful canyons. There are several questions regarding
25 land that I am concerned about. One is whether anybody can assure

1 us that there will not be serious erosion problems with this compacted
2 spent shale. It has been demonstrated now that if you put about 300
3 pounds of fertilizer an acre on it and water it every day or twice a
4 week or whatever it is, you can revegetate the spent shale. What
5 happens to it when you stop taking care of it like a greenhouse? The
6 material is fine granuals, grainy like grit, and it just seems to me that
7 it would be very easy for the wind and water to erode this and increase
8 water pollution in the Colorado River. I can just visualize how this
9 would create huge gulleys and result in huge dust bowls 30 or 40
10 years from now after the oil companies have moved out, after they've
11 processed all the shale they've wanted and they are no longer watering
12 the land and taking care of it. So, I would ask who is going to take
13 care of this land if indeed, it is not stable over a long period of
14 time which I suspect it's not.

15 The fourth area I would like to comment on is recreation.
16 These lands right now are beautiful recreational lands with hardly
17 any population on them. It is the home of the largest deer herd in
18 the country. I believe this is a much higher use of the land, and I
19 don't believe we should develop it for oil shale and I make that
20 recommendation because I see that all the developmental and all the
21 economic aspects of this question predicated upon a growing demand for
22 more oil and I don't think that this is going to happen. There has
23 been a lot of talk of an energy crisis which is defined as supply being
24 unable to keep up with the demand. We right now waste more energy
25 than we use efficiently. When you look at the energy situation from

1 an overview and from an environmental overview, there are many more
2 attractive alternatives than developing oil shale to meet our energy
3 needs. One of the most attractive, I feel, is using the energy we have
4 much more efficiently. If we could go to an electric transportation
5 system, which is technically feasible today, it would double the
6 efficiency of our transportation system, that it would cut our energy
7 need in half, right there, for all transportation. It is much easier
8 and much more efficient to recycle material than it is to mine, refine,
9 and transport them. We could save massive amounts of energy there just
10 by the institution of recycling to obtain our materials from waste.
11 This also does much less environmental damage, we don't have to mine.
12 Also, better building design, use of more insulation in our buildings,
13 could considerably cut down on the 25 percent of the energy we use
14 for space heating units.

15 Also, if we were to use the wasted heat from the power plants
16 in the industrial process heat and space heat, we could reduce
17 substantially the amount of energy we use for these sources.

18 A study out of the Oakridge National Laboratories indicated that
19 our total energy needs could be 62 percent of what they are with this
20 one application alone -- this one improvement alone. Finally, the use
21 of solar heating and solar heating and solar energy for space heating
22 and cooling and for central station power generation would eliminate the
23 last large-scale need for any fossil fuel. So, I feel that the
24 implication of these technically feasible alternatives should alleviate
25 the need for any further degradation...alleviate the need for any

1 further degradation of our air, our land, and our water in the use
2 of fossil fuel to provide energy.

3 I would strongly urge you to consider these alternative to the
4 development of oil shale which would of necessity do mass environmental
5 damage to our air, land, and water and not supply any significant
6 portion of our energy needs and consider the alternatives much, much,
7 much more strongly. All I ask you is to develop political decisions
8 and I urge you gentlemen in the government to lobby and look at the
9 alternatives. Don't leave our state or waste land. Thank you.

10 STATEMENT OF CLIFF CHAMBERS

11 MR. CHAMBERS: Gentlemen, my name is Cliff Chambers from the
12 GSU School of Forestry and Natural Resources in Ft. Collins, Colorado.

13 The Oil Shale Prototype Draft Environmental Impact
14 Statement's social considerations are, to be blunt, inadequate,
15 inefficient and irresponsible. The social needs of the citizens on
16 the Western Slope are definitely not adequately considered.

17 I feel that when one is considering social impact on the
18 tri-county area of Colorado involved with the oil shale prototype
19 program, there are many aspects of social impact that are not
20 adequately mentioned in the Statement. The following considerations,
21 I feel, will have a major impact on the surrounding environment and
22 must be thoroughly studied and included in the final C (102) Statement.

23 The first consideration is the influx of people into the
24 oil shale region of Colorado. The impact statement says towns of
25 Rangely, Colorado, will increase in population from 1,500 to 9,350.

1 Meeker, Colorado's population will increase from 1,500 to 7,650,
2 Grand Junction's population will increase from 20,170 to 30,000.
3 In general, the population influx caused by the construction workers,
4 operation personnel and support services required by sits C-a and C-b
5 will be 40 percent increases in the number of people that will migrate
6 to the Western Slope, but this is where specifics stop.

7 What about housing for the construction workers, operational
8 employees and support personnel? Questions not answered in the
9 social section of the Impact Statement titled "Impact on Existing
10 Economics and Social Environment" are:

- 11 1) How many acres of land will be required for
12 mobile home parks and construction of perma-
13 nent homes, and where will these be built?
- 14 2) Does the oil shale Regional Planning Commission
15 mentioned in Sec. 4, Page 56, Vol. 3, have
16 zoning plans that will adequately protect the
17 environment?
- 18 3) How will zoning and planning control new urban
19 development in a rural area so mentioned in
20 Vol. 3, Sec. 4, Page 57, paragraph 2?

21 The second major area not adequately covered in this report
22 are the additional service facilities that will be required: schools,
23 hospitals, libraries, additional police force, department stores, etc.,
24 all these services will be required for an additional 40 percent
25 population. These consideration are brushed off in the C (102) report

1 on oil shale, but people need these service to sustain a good quality
2 of life in the area of the Western Slope.

3 The third major area poorly considered is the mobile
4 population that an oil shale industry will encounter. Construction
5 workers will come and go as the prototype project is started and
6 completed. Will the services such as schools, highways, and hospitals
7 be abandoned as these people leave the area or will the prototype
8 plant operators fill in the gap? Again, this is unanswered.

9 The fourth major social consideration left out is the
10 water needs for the 40 percent increase in population. The oil
11 shale industry will require great amounts of water as indicated in the
12 102 Statement, but about the people in cities like Rangely, Colorado?
13 Don't they need water too? Will the existing water supplies in the
14 cities be adequate or will more water be needed? If more water is
15 needed, where will it come from? How will the water be transported
16 and will it be pure? Again, questions unanswered that must be
17 responded to.

18 The fifth major consideration left out is that of public
19 transport. Roads will have to be built to and from the prototype
20 plant. Roads will have to be built to sustain the additional population
21 that will migrate to the Western Slope. How many roads, where will
22 these roads be built? I hate to be repetitious, but this Environmental
23 Statement forces me to, again these questions are unanswered.

24 If time permitted, I would go into the questions I raised
25 in much more detail. But, I feel the basic questions I have raised

1 are sufficient for a brief oral presentation. What must be stressed
2 is that questions such as water requirements for oil shale committees
3 should not be brushed over lightly, but answered fully. Specifics
4 on how many, where and why must be answered fully and fully covered on
5 each question of social concern that I have raised this afternoon.

6 In closing, I hope statements as those in Vol. 3, Sec. 4,
7 Page 5, of the Impact Statement (read) will be taken out of the draft
8 and completely revised in the final edition of the report. The social
9 impact section is full of these generalities and must be re-written.

10 If the amount of space devoted by the Draft Statement to the
11 social impact of a prototype oil shale program is any indication
12 of the concern for the citizens of the oil shale region, I feel very
13 sorry for the people now living in cities such as Meeker, Colorado.
14 These people deserve more. Thank you.

15 EDWIN J. MERRICK

16 MR. MERRICK: Gentlemen, my name is Edwin J. Merrick and I am
17 a graduate engineer, hold a Masters' Degree in Mechanical Engineering.
18 I have served many years as an executive in advanced systems
19 engineering in the aerospace and defense industry. I am now serving
20 the National Wildlife Federation as the Southwestern Regional Executive.

21 I am a technologist; I am an ecologist. More importantly
22 I must try to be a judge. I have read; I have considered the draft
23 environmental statement; I must observe that on the information
24 that presently exists oil shale technology should remain confined
25 to the laboratory. This infant fuel-Frankenstein beating on the

laboratory door to be released cannot yet be freed to sterilize the land, to pollute the air, to embalm the wilderness, to suck the rivers dry.

Volume II of the Draft Environmental Statement Pleads

"The Government could delay the initiation of an oil shale program on public lands, and reassess the situation from time to time to determine whether such a program should be started. This would avoid, on a short-term basis any effect on the environment but in the long run the effect could prove more harmful. Potential environmental impact would probably be the same at a later date, but many of the things which must be learned to protect the environment cannot be learned except by actual experience."

I am not sure those statements are either true or wise. We are all familiar with learning by actual experience; with misguided technology, with misapplied resources - how many need to be reminded of Thalidomide, the modern drug that deformed the bodies of the unborn while we learned by actual experience. How long since Silent Spring did it take to recognize the pervasive, persistent, pernicious clutch of D.D.T.? Daily, hourly, we all hear the relentless crunch between man and technology in this automotive, automated, and nuclear age.

Here in the oil shale development problem we have an opportunity, not ecologists alone, not citizens alone, not energy producers alone, not governmental overseers alone, but all of us together have an opportunity to delay for a while the silent spring.

1 To hold off the silent spring, to soften the crunch until such time
2 as dedicated laboratory research and careful systems analysis
3 demonstrate clearly and incontrovertibly that all aspects of the oil
4 shale systems problem are resolved.

5 There is a time when technology is too primitive, the by-
6 products too damaging, the side effects too gross, the relationships
7 too uncertain to proceed. It is as though we launched the Apollo
8 spacecraft toward the moon and then told Astronauts Armstrong, Aldrin,
9 and Cernan "Look, fellas, don't worry! We can get you there, we can
10 land you safely. And, in the meantime we'll be working on the problem
11 of getting you back."

12 Sure, we need the oil. But, what are we going to do with
13 the tons of waste? Where is the market for this product of progress?
14 Can we stuff it in frankfurters? Pave more wilderness? Fill up the
15 Grand Canyon? How bad is the waste problem? What does the industry
16 suggest it is going to do?

17 Volume I states that:

18 "Commercial shale oil production, under the most
19 optimistic estimate, could begin about 1975 at a rate of about 18
20 million barrels per year (50,000 barrels per day), on the basis of
21 anticipated technological progress."

22 It goes on to state:

23 "In the period 1981 to 1985 capacity is assumed to grow
24 to one million barrels per day."

25 If we take the data given in Table 1-5, Quantities of in

Place and Spent Shales, and calculate the excess spent shale, that is the amount of increase in the volume of shale after the oil is removed or what my son called the 'popcorn effect,' we get the following data.

TABLE I

Quantities of in Place and Spent Shale

Upgraded Shale Oil	Shale mined tons per yr. <u>average</u>		Shale volumes in billions of cubic <u>ft. per year</u>		
Barrels per Day	Barrels per Yr.		In place average	Spent Loose	Excess Loose
50,000	18 million	28.4 million	.43	.65	.22
			billion	billion	billion
1,000,000	360 million	568 million	8.5 "	13"	4.5 "

The Draft Statement notes:

"The volume of the spent material even after compacting, is at least 12 percent greater than its in-place volume. This is due to void spaces in the mass of crushed and retorted material which are not present in the shale prior to mining."

At a 50,000 barrel per day rate .22 or about one quarter of a billion cubic feet of excess spent shale (the popcorn) is being created each year and at a one million barrel per day rate, 4.5 billion cubic feet of excess spent shale are being created each year. These are very large numbers and difficult to comprehend. In more plebeian terms at a shale oil production rate of 1,000,000 barrels per day, if we piled the resulting excess spent shale in the streets of Denver,

1 the streets would be eleven feet deep in this residue and would be
2 repeated each year. If we piled not just the excess, but all of the
3 spent shale in the streets, Denver would be inundated with a 33 foot
4 deep cover every year.

5 That's a lot of waste material to plan for and an examination
6 of what is said about disposal in the Draft Environmental Statement
7 is in order.

8 On Page I-56 of Volume I we find

9 "If the material is to be returned to a worked out
10 area of the mine, a slurry system would probably be used. Although
11 this has not been attempted for spent shale, experience with the other
12 materials and limited tests with shale indicate the slurry should
13 contain 50 percent solids."

14 On Page I-40 is the statement

15 "It is assumed that most spent shale will be initially
16 disposed of in box canyons."

17 On Page I-50 it notes

18 "...We anticipate that in any commercial operation the
19 permanent processed shale surface will be planted in grass as a
20 temporary cover to control erosion."

21 In Volume III we read

22 "An alternative mode of operation might be to return the
23 spent shale to the pit after 16 years or until the pit opening was
24 large enough to permit return as backfill."

25 In Volume III we note the observation

1 "The visual impact from the disposal of spent shale and
2 overburden storage would be notable until restoration activities
3 are completed...spent shale disposal in the Douglas Creek drainage
4 would alter the view of cathedral bluffs from the Douglas Creek
5 drainage from the top of the bluffs."

6 You bet it would alter the view. Incredibly and callously
7 no mention is made of the plant and wildlife underneath that spent
8 shale or the free flowing clear waters below.

9 Volume III notes

10 "Any damage to this water source as a result of oil shale
11 development, either to the ground water supply or contamination of the
12 surface water, would result in serious effects on livestock and wildlife
13 use."

14 I suspect it would be quite serious -- should we instruct
15 the trout and the elk and deer to hold their breath for 16 years while
16 we solve the problem?

17 That's just the spent shale problem. With respect
18 to in situ processing in Volume III we note

19 "However it should be noted that in situ processing is
20 in the experimental phase of development and there is no assurance
21 that commercial technology can be developed."

22 No assurance! But, we're ready to tear up the wilderness.
23 To view in a detached way these contradictory statements on how to
24 handle spent shale, on watershed destruction, on in situ processing,
25 I would like to quote from the hearings in the House of Representatives

1 of the Ninety-first Congress on the environmental decade. During
2 these hearings an article by the famous British scientist, Lord Ritchie-
3 Calder was quoted in entirety. I read from the article the following
4 paragraph:

5 "A hundred years ago, Claude Bernard, the famous French
6 physiologist, enjoined his colleagues, 'true science teaches us to
7 doubt and in ignorance to refrain.' What he meant was that the
8 scientist must proceed from one tested foothold to the next (like
9 going into a minefield with a mine detector.) Today we are using the
10 biosphere, the living space, as an experiential laboratory. When the
11 mad scientist of fiction blows himself and his laboratory sky-high,
12 that is all right; but when scientists and decision makers act out
13 of ignorance and pretend that it is knowledge, they are putting the
14 whole world in hazard. Anyway at best science is not wisdom; it is
15 knowledge, while wisdom is knowledge tempered with judgment. Because
16 of over specialization most scientists are disabled from exercising
17 judgments beyond their own sphere."

18 Thus wrote Lord Ritchie-Calder.

19 On Page I-74 we find recognition of this principle,
20 it reads:

21 "Although significant progress has been made in delineating
22 and devising environmental control measures, additional research is
23 required. Such work is being conducted by independent groups within
24 the public and private sectors. In addition, some 50 representatives of
25 local, state, federal, and industry organizations have been asked by

1 the state of Colorado to outline a broad course of additional studies
2 for:

- 3 (1) Revegetation and surface rehabilitation
- 4 (2) Environmental inventory and impact
- 5 (3) Water resource management
- 6 (4) Regional development and land use planning

7 The details of these studies have been developed and
8 agreement has been reached on joint participation in this three-
9 quarters of a million dollar, 2 year effort. The results of this
10 cooperative effort will be to complement and demonstrate many of the
11 concepts presented in this evaluation. The data from these studies
12 would be available prior to development of either public or private
13 land."

14 I believe it is essential that the data be made
15 available before any development of public or private lands.

16 The planned destruction of wildlife habitat, the conversion
17 of our beautiful streams into industrial sewers must be prevented
18 at all costs. The important point is that conscientious and
19 competent laboratory research can solve these problems. Extensive
20 laboratory work is needed in the total oil shale systems problem
21 starting with in situ recovery and including rational approaches to
22 conversion and recycling of the attendant waste.

23 The stipulations for the proposed oil shale prototype program,
24 if and when any leases are issued, must include the requirement at
25 every leased site for the establishment of an overseers committee

1 composed of representative of industry, government, education, conser-
2 vation, wildlife, and concerned citizens. The problems are too complex
3 for the technologists of the oil industry alone.

4 On Page II-9 of Volume I we note that in the Green River
5 formation of the three state region:

6 "The known parts of the oil shale deposits of the region
7 contain at least 1,800 billion barrels oil equivalent. Some 80 percent
8 of the known higher grade reserves are located in Colorado, 15 percent
9 in Utah, and 5 percent in Wyoming."

10 Those reserves at a daily production rate of one million
11 barrels would last some 5,000 years. Can you visualize the pile of
12 paleolithic popcorn that would result?

13 Isn't it comforting to contemplate a series of modern
14 pompeii's inundated not by the fury of an exploding volcano but by
15 the mindless, thoughtless refuse of progress fired by self-seeking,
16 self-serving savages.

17 Gentlemen, I recommend we put this gross genie back in the
18 bottle. We need time, we have time. We need intelligence, we
19 have intelligence. We need resources, we have resources. Let us
20 use them together to solve the total problem. We need the oil. We
21 need the energy. Even greater will be the need for the beauty, the
22 solitude, the sanctity of the wilderness in time to come. Technology
23 can recycle glass bottles, paper cartons, beer cans, junk automobiles.
24 Technology cannot recycle the Rockies.

25 Thank you very much.

BEN WEICHMAN

MR. WEICHMAN: Thank you for the opportunity to appear. It is not possible to define meaningfully in the ten minutes allotted, the need for the development of oil shale. Therefore, we shall submit in written form and in detail to the Department of the Interior shortly hereafter.

My name is Ben Weichman. Tim Robberson is the attorney. You can always tell the difference. I work for the Superior Oil Company and would like to say that the U. S. Department of the Interior should be commended for their very rational approach to the potential environmental problems associated with oil shale development. The Draft Environmental Impact Statement cites essentially all of the presently available information it has of any value, in defining the extent of the potential environmental problems. The Department of the Interior didn't attempt to offer a complete solution but it does review the data from a solution potential. The Department of the Interior's oil shale program is so tailored as to wisely throw the solution of these problems into the laps of private industry where it belongs. The tough leasing terms pertaining to the development require of the developer to find acceptable solutions to all environmental problems before continued developing is possible. The pursuit of oil shale development by private enterprise can and will define the technology of oil shale development without degradation to the environment beyond what is acceptable and beyond responsible limits. The technology for the responsible development of oil shale has essentially

1 been defined and most of that technology is listed in the draft
2 statement. The draft statement...most of the data in the draft
3 statement...most of the data is focused on the worst set of conditions
4 that could prevail in an economic commercial oil shale plant. I
5 would like to briefly define the probably development conditions
6 under which most of the environmental problems could be entirely
7 avoided. That involves development of oil shale which contains the
8 associated minerals of Nahcolite and Dawsonite. Time here doesn't
9 allow detailed treatment of all the processes or technology nor is
10 there time to adequately reply to all of the objections to oil shale
11 development. However, I would like to briefly discuss a few of the
12 most publicized objections.

13 A frequent objection deals with the very need for the oil
14 shale development. In answer to this I would refer to the draft
15 statement which shows substantial reserves of rich oil shale in the
16 Piceance Creek Basin which contains greater than 20 percent Nahcolite.
17 The draft statement also identifies Nahcolite as an absorber of SO_2 .
18 An oil shale industry producing 1,000,000 barrels of oil shale per
19 day from Nahcolite oil bearing shale, would also produce 300 tons
20 per day of Nahcolite; and 300 tons per day of Nahcolite can potentially
21 free for use 2,000,000 tons of three percent sulphur coal per day by
22 cleaning up the static gas to meet all specifications.

23 The combination of 1,000,000 barrels of shale oil per day
24 and 300,000 tons of Nahcolite per day could, therefore, potentially
25 make available for use over twenty quadrillion BTU's of clean energy

1 per year. This is 54 percent of the projected 1985 energy deficit
2 in the United States.

3 Another highly publicized objection to the development of
4 oil shale is the necessity for the surface disposal of vast amounts
5 of shale residue envisioned to cover areas--very large areas--of the
6 present surface. There is in the Piceance Creek Basin over 1,050,000
7 acres of oil shale containing 20 percent Nahcolite and also more than
8 10 percent Dawsonite. The draft statement reviews the steps of the
9 extraction of both Nahcolite and Dawsonite from the oil shale in
10 processing. An oil shale operation...mining oil shale from an
11 underground mine in which the oil shale contains greater than 20
12 percent Nahcolite and 10 percent Dawsonite will allow all of the spent
13 shale to be returned back underground to the mine. Return of all
14 of the leached spent shale into the mine is possible because of the
15 removal during the processing of material of nearly 50 percent of the
16 original volume of the material as well as an amount due to processing
17 will increase the remaining volume from about 50 percent to about
18 90 percent of the original rock. Replacement of the leached spent
19 shale back underground eliminates any ecological problems encountered
20 by surface disposal, and it is also expected to lend support to mine
21 structure thereby eliminating surface subsidence.

22 A third frequently publicized objection to oil shale develop-
23 ment is water degradation of the Colorado River system. Data is
24 present in the draft statement which is not discussed in detail but is
25 the basis for pointing out that it is possible to process oil shale

1 in large quantities without degradation of the Colorado River systems,
2 and even more importantly can potentially upgrade the quality of the
3 Colorado River water. A plant processing oil shale, Nahcolite, and
4 Dawsonite is a potential source of pure water. This can be shown
5 by review of the processes. A 1,000,000 barrel of oil per day oil
6 shale plant producing Nahcolite and Dawsonite would use 480,000 acre
7 feet of water per year without exacting any surface water from the
8 Colorado River system. The saline water from the leached zone can
9 supply all of these requirements. Of 480,000 acre feet of water a year,
10 88,000 acre feet per year is consumed for dust control and spent
11 shale wetting prior to disposal; 355,000 acre feet per year is used
12 for the leaching process in the production of aluminum compounds and
13 sodium carbonate. However, most all of this water can be recovered
14 in barometric condensers as pure water for subsequent use. Thirty-
15 eight thousand acre feet per year is required for hydrogen production,
16 if hydrogenation of the shale oil is necessary; and also for the type
17 facilities associated with a 1,000,000 barrel of oil per day plant.
18 This water can be supplied from the pure water production from the
19 process, leaving a surplus of 317,000 acre feet per year of
20 pure water.

21 If the total water requirement of 480,000 acre feet of water
22 per year is taken entirely from the leached zone, it is estimated that
23 there is at least a five-year supply of saline water in the leached
24 zone in the Piceance Creek Basin, not considering any recharge. The
25 pure water produced from the process is equivalent to about three

1 quarters of the average flow of the White River as measured at
2 Meeker, Colorado.

3 A fourth publicized objection to oil shale development is
4 why doesn't the industry prove the economic production of oil shale
5 on presently held private lands. The answer is it is just simply
6 not economic. However, I would like to point out in addition that
7 all of the land or almost all of the land which contains the minerals
8 Nahcolite and Dawsonite are held by the Federal Government. There's
9 very little private acreage involved in the oil shale lands containing
10 the minerals Nahcolite and Dawsonite.

11 Other publicized points of opposition to oil shale have
12 been effectively answered, however, at this time. Time here does not
13 permit further detail at this time. The beneficial impact of oil
14 shale development on the energy and environment and the energy
15 requirements of this country substantially overshadows any other
16 apprehension that has not been discussed at this time.

17 Thank you very much.

18 MR. DAY: Thank you. I will call on Myron Corrin.

19 MYRON CORRIN

20 MR. CORRIN: My name is Myron L. Corrin, Professor of
21 Atmospheric Science at Colorado State University. I am speaking
22 here not as a representative of that group or any other group, but
23 primarily as an individual who has been active in the area of
24 atmospheric research for quite some time in both an academic and
25 research capacity. I shall restrict my remarks here to the draft

1 statement as regards the possible adverse environmental impact of
2 the contemplated oil shale development upon air quality.

3 I would begin by stating that the treatment of this
4 subject in the draft statement is in my opinion both cursory and quite
5 inadequate. The findings are summarized quite properly on page IV-32
6 of Volume III in the following words: "the impact on the air quality
7 has yet to be established." The severity of air pollution is normally
8 defined by the increased concentration of various pollutants, gas, and
9 particulates. There are standards governing permissible concentrations
10 which are given in the terms of time which those concentrations persist.
11 These standards have been set by both the Environmental Protection
12 Agency and by the various states.

13 Actually, what goes into such a concentration is three
14 factors: one, the rate at which the material is put into the
15 air; secondly, by the mixing of the air; and thirdly, by the rate of
16 removal of materials from the air. It is possible in the present
17 state of the art, given an emission rate and given the proper meteorological parameters to compute a model which will give the ambient air
18 concentration as a function of space and time. I have failed to
19 find any such considerations given in the proposed statement. In
20 fact, I have seen not even an attempt to obtain the data necessary
21 to apply the rather well known model.

22
23 There are a few general statements given regarding gross
24 wind and climatology conditions under a very complex valley terrain
25 regime. The present state of knowledge regarding the climatology

1 of the sites is in my opinion insufficient for a true estimate of the
2 effect of the oil shale development upon air environmental quality.

3 There is known in a fairly qualitative sense how the
4 possibility of inversion--an atmospheric condition which traps
5 pollutants in a rather thin, stagnant layer--it is stated that such
6 inversions are often encountered. There are statements about mixing
7 depths in June and January, but in no words could I find any
8 references to statistics giving the probability of inversion or
9 anything about the duration of inversion; and it is the duration of
10 inversion conditions which lead to what is commonly called air
11 pollution episodes in which for a period of days the pollutants are
12 trapped in essentially a stagnant air mass and build up to a very
13 high concentration. I have a strong suspicion that much of the climato-
14 logical data was obtained from the nearest weather stations and that
15 the required extensive study required for a proper statement has not
16 been made. I emphasize especially the lack of micro-meteorological
17 data. Data for very, very restricted areas which I consider necessary
18 for the evaluation of pollution from an oil shale plan.

19 I am in complete agreement with the statement made that all
20 emissions must be controlled to meet present State and Federal emission
21 standards. I am not at all convinced, however, that the technology
22 required to meet such standards is at hand. There is no sound
23 evidence in the statement regarding this question. We simply
24 have remarks about the general technology and methods of air pollution
25 control but there are no studies indicating the application of any

1 such methods to the specific problem of oil shale refining and
2 retorting. It is noted in the report that even if emission standards
3 are met the quality of the air will be degraded.

4 Let me speak to one specific point. The present standards
5 for both emission and ambient air concentration particulates relate
6 only to the weight of such finely dispersed solids and liquids. We
7 will shortly see, I am convinced, the introduction of other regulatory
8 parameters directly related to the effects on human health. These
9 include particle size distribution and chemical composition.

10 The so-called respiratory types ranging in size from about
11 half to two microns is particularly dangerous to human health in
12 that particles in this size range are retained in the lungs. Note
13 that if we set the standards in emissions in terms of mass, we are
14 effectively ignoring small particles. An increase of ten in the
15 radius of a particle means an increase of a thousand in the weight
16 of a particle. Our control techniques for particulate emissions are
17 based upon mass. They work with big particles, and a 99 percent
18 figure looks awfully impressive. Remember, with a 99 percent figure
19 most of the small particles are still getting through, and it is
20 these small particles which will have the major effect upon the
21 health of humans and animals. I have seen no data in that statement
22 regarding the particle size distribution, and I see no evidence
23 regarding the chemical composition of the particulates.

24 I am especially concerned about the possible existence of
25 carcinogen particulate matter of a particular chemical composition

1 which can cause cancer on both the skin and the lungs. And I
2 further note the production of carcinogens is rather common in which one
3 conducts a pyrolysis operation or a retort operation. I saw no
4 consideration given to the possible cumulative effect on many
5 plants operating in a smaller area. Under these conditions even
6 though individual emission standards may be met, the overall effect
7 is gross deterioration of air quality.

8 In conclusion, I am disappointed by the apparent lack of
9 work in preparing these sections of the Environmental Impact Statement.
10 With a program of this prospective magnitude, I would have expected fewer
11 general and platitudinous statements and more specific studies and
12 information. I strongly doubt the implications regarding air pollution
13 control technology will be achieved. I would suggest the necessity
14 for the study of specific sites.

15 Let me conclude with another quotation, "once sufficient
16 background data is obtained it is then possible to assess the actual
17 impact of those air contaminants expected from oil shale operations:
18 particulates, oxides of nitrogen, and sulfur oxide." It is more than
19 unfortunate that the Environmental Impact Statement does not present
20 sufficient background data upon which a proper assessment can be made.

21 Thank you.

22 CHARLES WARNER 1/

23 MR. WARNER: 1/I am Charles Warner representing the Wilderness
24 Workshop of the Colorado Open Space Council and will submit a written
25 statement which is more detailed later today, I'd like to note here

1 it is very hard for interested citizen groups to assemble detailed
2 comments in response to the draft impact statement when there are
3 so few copies available. Further, we question the wisdom of holding
4 hearings such as this during working hours which thus restricts the
5 average citizen severely because he can only rarely obtain the full
6 day off as necessary to participate in a hearing such as this one.

7 For the moment, I will limit my comments on the impact
8 statement to the subject of the wilderness which is obviously our
9 most pressing concern as relates to the impact of the proposed pilot
10 project upon the White River, the proposed dam there for oil shale.
11 The south fork of the White River has been discussed all the way
12 since 1966 in Forest Service hearings on areas surrounding the Flat
13 Tops. This area has been considered wilderness area for many years.
14 Conservation groups, both state and national, supported the inclusion
15 of this area in the first set of wilderness areas in 1966. The area
16 is noted--that's area G-1--in the most recent Forest Service study of
17 the Flat Tops area.

18 That portion of the river which would be dammed and
19 destroyed by the proposed oil shale development is in wilderness
20 quality land and is itself of quality sufficient to qualify the river
21 as a Wild Scenic River under the national Wild and Scenic Rivers Act.

22 The significance of this stretch of water as it stands is not
23 only in the quality of the wilderness which is a limited resource and
24 could be destroyed, but in the credibility of the impact statement
25 when it pretends to consider alternatives. If after two sets of

1 hearings by the Forest Service in consultation with state government
2 and industry an alternative to this dam site has not been seriously
3 considered to permit this area to remain wild, then how are we to
4 believe that any alternative has been seriously considered in other
5 areas of greater magnitude and complexity.

6 Having read the report almost in its entirety, we do not
7 feel it's adequate. It is hoped that the final statement will truly
8 assess both alternatives and damage to the environment. Further, it
9 should consider a total revamping of the provisions for the monitoring
10 of environmental impact.

11 As stated before our specific comments will be made available
12 later.

13 Thank you.

14 MR. DAY: Hester McNulty.

15 HESTER McNULTY

16 MRS. McNULTY: First I would like to make it clear that this
17 is the official statement of the League of Women Voters of Colorado.

18 I am Hester McNulty speaking for the League of Women Voters
19 of Colorado which has been engaged for a number of years in the study
20 and evaluation of many of the broad environmental issues that are
21 inherent in the proposed oil shale leasing programs. We are particu-
22 larly concerned with the implications of the proposal on air quality,
23 water resource management, and land use planning in the State of
24 Colorado.

25 The League of Women Voters believes that citizen participation

1 is essential in environmental decision making and would like to
2 register our protest concerning the insufficient length of time
3 given for analysis of the 1,150 page draft statement. In addition,
4 we support the involvement of all levels of government--local, state,
5 and federal--in the decision making process; and we ask why relevant
6 state boards, such as the Colorado Air Pollution Commission, were
7 neither sent a copy of the draft statement nor asked for comments on
8 a proposal that directly effects all the citizens of Colorado?

9 Some of the major concerns of the Colorado League are
10 embodied in the following questions:

11 In view of the fact that the draft environmental statement
12 admits that the development of an oil shale industry would have a
13 major environmental impact on the regions to be developed, and since
14 these proposed oil shale operations will produce only four percent
15 of the estimated 1985 national energy needs, we question whether
16 there is a valid environmental trade-off? Is the proposed oil shale
17 leasing program consistent with overall environmental goals for the
18 State of Colorado?

19 Should there be a full-scale oil shale leasing operation
20 before either a state or national land use plan has been developed?
21 Should there not also be a national energy policy before any such
22 large-scale commitments of land are made?

23 We have noted in the draft impact statement that up to
24 340 tons of sulfur, 120 tons of nitrogen dioxide, and 40 tons of
25 fugitive dust and particulates will be emitted daily under full

1 operating conditions. We wonder how these daily emissions will affect the
2 overall air quality in our state?

3 Since the estimates for consumptive water use range as high
4 as 156,000 acre feet annually, we question whether the cumulative
5 effect of this impact on the water resources of both the State of Colorado
6 and the entire Colorado River Basin have been adequately assessed?
7 And, we ask who will be responsible for overseeing erosion and salinity
8 control over the long-range and also who will be ultimately financially
9 responsible?

10 Have the alternative sources of energy been sufficiently
11 evaluated in the draft statement or have they been dismissed as
12 unfeasible only because they are not yet in full-scale production?
13 For instance, is the conversion of organic solid waste to low sulfur
14 fuel oil any more experimental than the proposed oil shale development
15 itself? As the draft statement observes, "If only half of the organic
16 solid waste could be converted to oil, it could supply an amount equal to
17 current volume of residual fuel oil now used for electrical generation."
18 Since the disposal of solid waste has become a major problem in
19 many areas of the country, might it not be more practicable to institute
20 programs to develop energy from this source rather than from oil shale?

21 Before any irrevocable decisions are made, the League of
22 Women Voters of Colorado urges that the total long-term social and
23 environmental impact of oil shale development on the state be carefully
24 weighed against the short-term benefits to be gained.

25 MR. DAY: Thank you. Next the Colorado Citizens for Clean Air.

EUGENE WEINER

MR. WEINER: This statement reflects the concern of Colorado Citizens for Clean Air and the Energy Workshop of the Colorado Open Space Council. Before we raise questions about details in the impact statement, we want to express our concern that the development of oil shale is being proposed at this time without any national energy policy having been formulated. Even the pilot study proposed here will cause a significant deterioration in environmental quality, and this must be weighed against the benefits from additional energy resources by assigning priorities to them in an overall national planning effort. Until such an overall plan is formulated, it is impossible to determine whether we really want the development of oil shale to proceed at this particular time. With this reservation, we would like to point out what we feel are inadequacies in the impact statement relevant to the air pollution problem.

I. Air Basin: The State Health Department has made some measurements of how particulate emissions affect the air quality of naturally defined air basins in the Piceance Creek area. We see no indication in the impact statement that there has been any analysis of the rate at which pollutants can be emitted into the specific air basins of the Piceance Creek area without causing unacceptable loss of air quality. Such an evaluation must include emission contributions from the industry, new communities, transportation, and any local power generation.

1 II. Operating Problems: Although the statement claims

2 that particulates and dust generated in the processing of shale will
3 be adequately controlled by using the best existing technology,
4 it is common knowledge that industries with similar problems, such as
5 the cement industry, cannot guarantee adequate controls at high volume
6 operations, even with the best technology available. All the impact
7 statement promises, in essence, is to do the best possible job with
8 no guarantee that particulate and dust levels can actually be reduced
9 to the .08 grain/cubic foot level promised in the statement.

10 This also applies to the control of stack emissions. Public
11 Service Company has been unable to meet State emission standards
12 even though they utilize the best possible technology. It must be
13 recognized that the oil shale industry will face the same problems
14 that the power industry has been unable to solve, simply because
15 they are processing unprecedented amounts of material.

16 There is no evidence that the industry has considered
17 the possibility that the particulates from these particular ores
18 might contain unexpected quantities of toxic or radioactive metal
19 traces. Heavy metals and radiation should be monitored until the
20 existence or lack of such a problem is determined.

21 Tailing dust problems are to be controlled by wetting. It
22 is stated that the tailings will assume a cement-like character in
23 the wet condition which will keep it compacted. Past experience
24 has shown that unless such tailings are carefully controlled with
25 moisture, the brittle characteristic and low abrasive resistance of

1 the dried tailings make it easy for strong winds and mechanical
2 abrasion, such as traffic, to generate considerable atmospheric dust
3 loads. We believe that additional maintenance, such as revegetation,
4 will be necessary in the long run. The statement makes no mention
5 of how the tailings dust problem will be controlled in the event of a
6 severe water shortage, nor what party will be responsible for the
7 maintenance of tailings after the industrial activity has ceased.

8 III. Power Plants: Although the statement makes an effort
9 to include the effects of the new communities and transportation
10 associated with the industrial development, it does not address itself
11 to the generation of the required 100 megawatts of power per pilot
12 plant site. Where are these plants to be located? How will they affect
13 the already rapidly deteriorating air quality in the Four Corners
14 region or region or wherever else they might be located?

15 IV. Non-degradation Policy: The statement's conclu-
16 sion that there will undoubtedly be air quality deterioration appears
17 to be in direct conflict with the non-degradation regulation of the
18 Colorado State Health Department. The atmospheric character of the
19 region to be developed causes high surface winds to exist at certain
20 times of the year and frequent temperature inversions at other times.
21 Both conditions will undoubtedly lead to a degradation in air quality.
22 The high winds by raising surface dust, and the temperature inversion
23 by trapping all the particulates and emissions in the valley where
24 they originate. The clean air and long distance visibility of this
25 region are considered by many to be a valuable natural resource.

1 The impact statement does not consider the negative aspects of
2 destroying this resource, a factor which has figured prominently
3 in the public opposition to additional power plants in the Four
4 Corners region. The State Health Department has already observed
5 that in similar valleys, a single emitter operating below the
6 allowed emission rates can soon cause ambient air quality standards
7 to be exceeded because of poor air circulation. We feel that the
8 oil shale industry should be subjected to stricter emission standards
9 than comparable industries which are in less critical air basins.

10 MR. DAY: John Anderman.

11 RICHARD H. DALEY

12 MR. DALEY: Gentlemen, Mr. Anderman couldn't be here today
13 and has allocated his time to me so that I might speak. My name is
14 Richard H. Daley, and I am speaking as a private citizen.

15 Oil shale, if developed, will provide the country with a
16 new source of energy. The first question must be how will this
17 energy fit into the energy requirements of the country, and is the
18 amount large enough to justify the environmental damage which will
19 result?

20 TOSCO President Morton M. Winston in May of this year has
21 made the role of shale oil in the energy situation clear: "It is in
22 buying time before other energy sources are available that oil shale has
23 a significant role to play." This same philosophy of "buying time"
24 is the consistent implication of the considerations of alternative
25 energy sources in the Draft Statement--these other sources will

not be available until 1980-1985 and oil shale is needed to fill this gap.

The "most optimistic estimate" (Part II, p. 56) for oil shale development indicates that shale oil cannot even begin to fill this gap. The following figures from Part II of the Draft Statement illustrate the point:

Year	Shale Oil Production (Millions bbl./yr.)	Estimated Consumption (Millions bbl./yr.)	% Est. Consumption Supplied by Shale Oil
1975	18	6,550	0.36
1985	365	8,600	4.2

Thus even using the most optimistic estimates for shale oil availability, in 1985 this source of energy will supply only about four percent of our nation's needs. It is imperative to understand that even in the Draft Statement, it is conceded that by 1980-1985 other sources of energy will be available. The following statements have been excerpted from Part II of the Draft Statement and show that many alternative sources will likely be available by the time shale oil can supply four percent of our needs:

(P. 164) "Nuclear power cannot be considered as an alternative to shale oil before 1980."

(P. 127) "The current development program rate is not expected to provide for production quantities of natural gas that would be meaningful in comparison to the energy supply impact of the proposed oil shale development to the year 1985."

(P. 158) "There are presently no coal-to-liquid conversion

1 plants in the United States; however, a few prototype commercial plants
2 may be in operation in 1985."

3 (P. 123) "It appears unlikely, however, that development
4 of the needed technology and of the required industry can be accom-
5 plished in time to permit significant production from tar sands before
6 1985."

7 (P. 189) "While MGD appears to offer considerable future
8 potential for coal-fired power generation, the technologic and
9 economic uncertainties are still so great that it cannot be considered
10 as a viable alternative power source by 1980."

11 (P. 200) "It is doubtful if production of significant
12 magnitude from biological energy could be achieved by 1985 so,
13 pending future research and development, it cannot be considered a
14 viable alternative at this time."

15 (P. 201) "Accordingly, it (liquid hydrogen) is not
16 a viable alternative for consideration within the 1980 time frame."

17 Obviously, any justification for development must be, and
18 has been, to supply energy before these other sources are commercially
19 available. However, a supply of only four percent of our energy
20 cannot begin to justify the environmental damage which will result
21 from this development. Furthermore, virtually no attention is paid
22 to the certainty of use of a combination of all of these sources of
23 energy, or to the possibility of a rapid technological break-through
24 for development of at least one new source, or to the possibility that
25 the development of other energy forms will quicken if oil shale is not

1 developed.

2 Summarily, the environmental destruction which will result
3 from the development of oil shale compared to its contributions to
4 the nation's energy requirements before "cleaner" forms are available
5 makes development nothing short of ludicrous.

6 MR. DAY: Thank you. Mr. Charles Parks.

7 JAMES L. PHELAN

8 MR. PHELAN: Gentlemen, my name is James L. Phelan and
9 Mr. Parks has switched with me. I am addressing the Board as a private
10 citizen.

11 Thank you for giving me an opportunity to address myself
12 to one of the most important issues facing our state. I will discuss
13 only a small part of the draft environmental impact statement, the
14 consideration given to the socio-economic effects of oil shale develop-
15 ment. After a close and careful study of the entire statement, I must
16 conclude that the statement's treatment of the social and economic
17 impact on the state of Colorado is woefully inadequate.

18 More specifically, I have the following criticisms of
19 the statement. First, the statement fails to adequately consider
20 increased water consumption by the new population brought into Colorado's
21 western slope. Nowhere does the statement offer a detailed analysis
22 of how much water will be needed to support the estimated 33,000 persons
23 who will come into the development area during the initial phase of
24 oil shale development, a fifty percent increase over the present popu-
25 lation. The Denver Water Board has estimated that the 1972 per capita

1 water use in Denver of 226 gallons per person per day will increase
2 to 230 gallons per person per day by 1980, the date when the prototype
3 plants will be in full operation. Based on these and other figures, we
4 can estimate that each person who comes into Western Colorado because
5 of oil shale development will consume between 80 and 160 gallons of water
6 per day. Each year that will mean at least an additional 1,577,895,000
7 gallons or over 6,000 acre-feet of water per year for increased domestic
8 needs. This is over and above the 15,000 to 23,000 acre feet of water
9 per year needed for production at the two prototype plants alone.

10 Water is probably the most scarce commodity in Colorado; it is the
11 key factor to be considered in evaluating the impact of population
12 increase in any part of the state, particularly the arid western
13 slope. Yet, the draft statement makes only passing reference on page
14 IV-14 of Volume I of the need for "development of a water plan to
15 consider regional, municipal, and industrial water supply and water
16 disposal." Similarly, the draft statement offers contradictory water
17 use projections for combined domestic and industrial uses. On page
18 VII-1 of Volume I the statement cites combined domestic and industrial
19 water use parameters of 116,000 to 164,000 acre feet per year for
20 1,000,000 barrels per day production; figures of 80,000 to 125,000
21 acre feet of water per year for the same level of production and the
22 same uses are then given on page VII-5 of Volume I. However, neither
23 projection for domestic water use is supported by any kind of analysis
24 or data in the statement; it is as if the figures were plucked from
25 different parts of the air.

1 Second, the statement fails to adequately consider the impact
2 of oil shale induced population growth on land now devoted to agri-
3 cultural use. Agriculture, like oil shale extraction, is a wealth-
4 producing use of land--housing and streets are not. Therefore, the
5 effect on agricultural lands near population centers in western
6 Colorado is of significant importance to the economy of western
7 Colorado. Yet the statement, while mentioning this problem, offers
8 no solution and makes no cost-benefit analysis of the change in land-
9 use patterns from agricultural to urban and suburban use.

10 Third, the problem created by increased pressure for
11 municipal services and expenditures in Western Colorado are inadequately
12 treated in the draft statement. While the statement makes several
13 estimates of increased tax revenues, the statement neither relates
14 these figures to realistic estimates of increased local revenue needs
15 nor discusses the problem of intergovernmental transfer of revenues
16 from government units experiencing the increased tax revenues to
17 units sustaining the increased demand for public services. From
18 all indications, population growth will take place primarily in Mesa and
19 Garfield counties and the cities of Grand Junction, Meeker, Rifle,
20 and Glenwood Springs, but 80 percent of the estimated increase in the
21 local tax base will be generated by the oil shale facilities in Rio
22 Blanco County; therefore, only 20 percent of the additional tax base
23 will be in counties and cities bearing the brunt of the increased
24 demand for public services. How do we get the needed taxes from Rio
25 Blanco County to Mesa and Garfield Counties and Grant Junction and the

1 other municipalities? The statement offers no ideas. Furthermore,
2 the statement inadequately considers the probable demand for better
3 public services than are now available in any of the cities, towns,
4 or counties involved. The new population will probably want services
5 not now available on the western slope of Colorado, services that will
6 have to be provided by local government. Where do the new taxes come
7 from? On page III-32, Volume I, the impact statement considers this
8 problem only with respect to the effect on immigrants' expectations.
9 The statement does not adequately discuss the sources of needed
10 additional revenues. True, some of the new taxes will come from the
11 increased property tax base created by the new homes, support
12 businesses, etc. in each locale. But, for several reasons, these
13 revenues will most likely be inadequate to meet all needs: first,
14 there is a time lag of approximately 36 months between the time a new
15 property is added to the tax rolls and the time when it produces tax
16 revenues; second, the numerous trailer parks that will develop because
17 of projected housing shortages, will not add significantly to the tax
18 base but will add a disproportionate burden to the demand for public
19 services; and third, per capita municipal expenditures may increase at a
20 marginally higher rate than the corresponding increase in local tax
21 revenues. The importance of these considerations is self-evident, yet
22 they are not treated in the statement as significant tax problems, but
23 are merely presented as problems that new and old residents will have
24 to live with. Furthermore, increased public capital needs are not
25 considered. Figures produced by the Inter-County Regional Planning

1 Commission for projected costs of growth in the Denver metropolitan
2 area suggest that public capital costs per new family coming into an
3 urban area will be \$11,500 in 1971. This figure could easily double
4 by 1976 or 1980. It covers expenditures for streets and highways,
5 schools, water facilities, parks and recreation, hospitals, sewage
6 disposal, libraries, fire protection, and police stations. If 12,000
7 new families are brought into the western slope of Colorado, then the
8 increase in capital expenditures for the effected municipalities and
9 counties could total at least \$138,000,000. Yet, despite the enormity
10 of this figure, the draft statement offers no estimate of how the
11 counties, towns, and cities are going to meet the added expense. A
12 further complication arises when we consider the impace on bonding,
13 the most likely way to finance these capital expenditures. Since
14 the level of permissible bonded indebtedness is a function of the
15 aggregate tax base in the government unit, the fact that the greatest
16 increase in tax base will not correspond to the greatest need for
17 new capital expenditures means that a city like Grand Junction may not
18 be able to float enough bonds to meet these increased capital construc-
19 tion needs. Once again, no word from the environmental statement.

20 A fourth area of concern not covered in the statement is
21 the question of how oil shale induced population growth fits into the
22 total growth picture for the entire state of Colorado. Many people
23 feel that the amount and distribution of growth is the most important
24 issue facing state and local government in Colorado. It is generally
25 accepted that, even without oil shale development, the state's population

1 will increase by 1.6 million persons by the year 2000 and that most
2 of this increase will take place on the Front Range, creating a huge
3 megalopolis from Ft. Collins to Pueblo. This is exactly the kind of
4 problem, now so overwhelming on the eastern seaboard and in California,
5 that can be avoided in Colorado if proper safeguards are enacted--
6 immediately. In its Final Report of March, 1972, the Colorado Environ-
7 mental Commission, appointed by Governor Love under state statute,
8 argued that Colorado has "reason to be concerned over both the growth
9 and distribution of population in this state," and urged the "institu-
10 tion of a state population distribution and planning process." The
11 Commission recommended that, "The General Assembly enact a policy of
12 rural revitalization, without stimulating in-migration." To accomplish
13 this goal the Commission urged the state to encourage, "any industry
14 locating in Colorado to employ local or indigenous skills and talents
15 rather than importing them." The issue boils down to this: We must
16 stop encouraging people to move into Colorado from out of state, and
17 at the same time we must redirect any natural growth within the state
18 away from the Front Range to other parts of the state, including the
19 western slope area involved in the proposed oil shale program. For oil
20 shale development to fit well into a rational program of population
21 distribution in Colorado, it is quite conceivable that a necessary
22 component of the development plan would have to be either prevent or at
23 least seriously curtail the influx of persons from out of state who
24 would come to Colorado seeking jobs in the oil shale business. There is
25 little question that this would happen, and, I might add, the impact

1 statement does mention the issue of in-migration in one clause of a
2 single sentence. But the statement gives no real estimate of the
3 level of that migration. We might learn from the experience of
4 Detroit after the 1967 riots when the city fathers announced the
5 creation of 50,000 new jobs to curb unemployment in the city. After
6 all the new jobs were filled, Detroit officials found its unemployment
7 had increased. The word had gone out on the job circuit that there
8 were good pickings in Detroit. The same thing happened with the
9 migration from rural areas to northern urban centers, with disastrous
10 effects. To help avoid some of the same kinds of problems, specific
11 migration control measures would have to be implemented. At the same
12 time, the potential development of oil shale offers an opportunity
13 to begin redistributing some of Colorado's present population away
14 from the Front Range to the western slope. Yet the draft statement
15 never even broaches this subject as to how the state and local agencies
16 can deal with these problems when even the Federal Government fails to
17 do so by regulation or through lease provisions.

18 A fifth problem not covered in the draft statement is the
19 question of what happens to the 33,000 and more inhabitants in Western
20 Colorado who depend on oil shale for their livelihood, either directly
21 or indirectly, when one, several, or all of the plants and mines shut
22 down. The statement gives no estimate of the life-span of either a
23 single operation or the oil shale industry as a whole if fully developed
24 in Colorado. Nor does it discuss the probably adverse effects on
25 inhabitants and the economy of the area that would occur after partial

1 or complete shutdown of the industry. Again, our own history should
2 have taught us to plan for such contingencies; witness the devastating
3 effect on New England towns of the shift of textile mills to the
4 South and the shoe industry out of the area, or the effect of shutting
5 down military bases in areas that depend on them for a large part of
6 their economic activity. Oil shale promises to have a similarly large
7 role in the economy of Western Colorado in the 1980's and 1990's, yet
8 no plans for such economic contingencies are evidenced in the impact
9 statement.

10 Sixth, the environmental statement fails to even mention
11 proposed new sources for increased energy demand of the new population,
12 much less discuss the potential environmental effects of increased output
13 from new or existing power plants or the environmental impact of
14 gigantic transmission lines. The statement vaguely considers power
15 sources for the oil shale operations, but makes no mention of similar
16 needs for the people brought in by the oil shale development.

17 Finally, and perhaps most importantly, the draft statement
18 makes none of the above-mentioned considerations nor any other socio-
19 economic considerations for the impact of a fully-developed oil shale
20 industry in Colorado. The impact statement gives only limited considera-
21 tion to the socio-economic effects of five prototype plants, accounting
22 for less than one percent of the potential oil shale to be developed
23 in Colorado. This might mean that all of the socio-economic impacts
24 could be magnified and multiplied by a factor of 9,900 percent. It
25 also means that the socio-economic projections made in the statement are

1 incomplete and practically meaningless. Furthermore, any consideration
2 of ways to rationalize population increases or properly provide for
3 orderly increase in municipal expenditures and tax distribution may
4 ultimately require that an upper limit be placed on the amount of
5 oil shale to be produced at any one time, based upon an evaluation of
6 how large a population and industrial base can be supported on the
7 western slope of Colorado. Given the limited supply of water in
8 Western Colorado and the direct relationship between increased water
9 demand for domestic use and for oil shale production, it may well be
10 that a level of production well below full capacity would be the upper
11 limit on production. No such considerations are offered in the Draft
12 Environmental Impact Statement. The obvious omission of these considera-
13 tions leads one to believe that technology and profit may once again
14 run rampant over total social and economic needs.

15 In light of the foregoing criticisms, I offer the following
16 recommendations to help bring the seriously deficient draft environ-
17 mental statement on oil shale development up to the level of coverage
18 demanded by the National Environmental Policy Act:

19 1. The impact statement must make a detailed analysis of
20 the increased water consumption demand caused by the oil shale-induced
21 population increase.

22 2. The statement must consider various ways that oil shale
23 development can fit properly into population growth controls needed
24 throughout Colorado. Specifically, the statement should develop ways,
25 most likely through the leases, to insure that Colorado residents are

1 given first priority on jobs created by oil shale development, as a
2 way to curtail the projected level of in-migration and to redistribute
3 the present Colorado population away from the Front Range.

4 3. The statement must make a detailed analysis of the
5 projected increase in municipal expenditures and capital outlays and
6 various alternative methods to properly distribute increased tax
7 revenues.

8 4. The environmental statement must make a detailed analysis
9 of what procedures should be developed to minimize the economic and
10 social impact of a sudden or long-term shutdown, either total or
11 partial, in the oil shale industry in Colorado, including the possi-
12 bility that the prototype plants will not bear fruit in a fully-
13 developed oil shale industry.

14 5. The statement must make a detailed analysis of the
15 environmental impact of new energy sources for the increased population
16 in Western Colorado, including the effects of large transmission
17 towers and wires.

18 6. The statement must make a detailed analysis of all
19 the socio-economic consequences of a fully-developed oil shale industry
20 in Colorado.

21 Not until these analyses are properly made can the
22 environmental statement be considered adequate. Thank you.

23 MR. DAY: Thank you, Mr. Phelan. I will next call on
24 Dr. Richard Bradley.

25 MRS. ESTELLA LEOPOLD 1/

1/ Transcript garbled - other information indicates that this statement was read by Mr. Robert Turner.

1 MRS. LEOPOLD: 1/I am Estella Leopold on behalf of the Denver
2 Audubon Society. Dr. Bradley has relinquished his time so that I
3 could read a statement from the Denver Audubon Society.

4 "We, the Denver Audubon Society Wildlife Workshop, subscribe
5 to the following viewpoints:

6 A. We believe in the maintenance of total biotic
7 communities with diversities of habitat in order to maintain wildlife
8 for this generation and all future generations.

9 B. We realize that America needs a national energy policy
10 which not only supports necessary uses of energy, but also reduces
11 wastages, and allows controlled and monitored development of
12 energy sources with a minimum of disturbance to biotic communities."

13 Consequently, we ask the following questions:

14 1. What assurances are being made that during all phases
15 of this project every opportunity be utilized to conserve, maintain,
16 and/or restore wildlife and wildlife habitat?

17 2. Why were the canyons (where there is some water for
18 wildlife at some times during the year) selected for the disposal of
19 mine wastes? What other areas were considered?

20 3. What are the specifications for restoring disturbed
21 areas to bring back the original community species?

22 4. Will the wildlife (approximately 30 mammal species and
23 250 bird species) maintain themselves over the period of time between
24 disturbance of the area and completion of habitat restoration?

25 5. What consideration has been given that some species

1/ Transcript garbled - other information indicates that this statement was read by Mr. Robert Turner.

1 will need specific assistance during this time? For example, feeding,
2 nonharassment laws enforced, areas of no hunting, etc.

3 6. Are there shale oil mining (and/or other mining) develop-
4 ment sites in similar semi-arid areas which have been researched for
5 environmental impact and revegetation studies related to wildlife?

6 7. What certainty have we that the data from those studies
7 would be incorporated into the planning and implementation of this
8 development, to minimize damage to wildlife and their habitats?

9 8. What assurances are there that the revegetation of
10 disturbed areas will bring back native plant species which will
11 support a continuing population of wildlife?

12 9. The draft states that additional costs incurred by
13 the operator in coping with environmental damages and habitat restora-
14 tion may be credited against royalties due the government. Why should
15 the government (the people) bear the costs of environmental damage to
16 public lands?

17 10. We understand that the steps to be taken to protect
18 the environment are under the control of a mining supervisor. What
19 assurances are being made that people knowledgeable in ecosystem
20 management will have, on a day-to-day basis, direct participation
21 in decision making to minimize ecosystem damage?

22 We strongly encourage the government to take the
23 innovative and leading role in protection of wildlife."

24 Thank you.

25 1/ MR. DAY: Mr. Edward Connors.

1/ Written transcript and recording is garbled at this point so that a brief statement by Mr. Mark Roberts does not appear. Mr. Roberts was contacted and asked to supply a copy of his remarks if possible. However, he did not do so.

EDWARD CONNORS

1
2 MR. CONNORS: There is no question but that water can be
3 made available for a prototype oil shale industry in Colorado. The
4 state has definite reservations, however, as to how an estimated
5 1/4 million acre feet of water can be supplied for a sizeable
6 industry at some future date. Yet, water is said to be one of the
7 three major constants to the full development of the industry.

8 The main problem regarding water, as we see it, is that
9 full approval of an oil shale program conflicts with a number of
10 other problems confronting the state and nation.

11 1. To provide such anticipated supplies of water, the
12 State of Colorado has been forced to eliminate considerable agricul-
13 tural water from its planning.

14 2. Will the oil shale industry actually be a solution to
15 the energy crisis, or will its full inception merely be a temporary
16 stop-gap which puts off our lack of supply to some future date? Full
17 scale development presupposes our continued dependence on a petroleum
18 industry oriented about the automobile. The Federal Government has
19 exerted precious little energy in examining alternative sources of
20 power which will have to be used.

21 3. This week the Federal Government is initiating a crash
22 study under former Attorney General Herbert Brownell, on the salinity
23 problem of the Colorado River Basin. This draft environmental impact
24 statement indicates that a prototype program (not mentioning full-scale
25 development) will increase the salinity of the Colorado River at Lee's

1 Ferry by 1.5 percent without indicating the adverse environmental
2 effects that will ensue in the lower basin states or in Mexico.
3 This salinity consists of excess dissolved sodium salts, primarily
4 bicarbonates and chlorides. Both of these areas are already under duress
5 because of excess mineralization of their water supply. Before any
6 further dilution of the Colorado River in the upper basin is eliminated
7 these deleterious effects will have to be answered for. Even without
8 oil shale, we may be headed for disaster in these irrigated farmlands.

9 4. At present, the retorting process of producing oil or
10 kerogen from shale requires vast amounts of water that evaporate and thus
11 are totally lost to the watershed. In addition, water of good quality
12 is needed--the very same type that the "river-basin states" need for a
13 dependent winter agricultural industry.

14 5. Another seeming conflict of water use (and thus confusing
15 to the public) is that the Federal Government has filed suit on Federal
16 lands to maintain minimum stream flows in Colorado and the Rocky
17 Mountain West. While laudable, this is yet another claim on an already
18 over-appropriated Colorado River--that is, unless the purpose of the suit
19 is to provide a seemingly subsidized water supply to the oil shale
20 industry downstream.

21 6. No mention is made of an anticipated influx of some
22 47,000 to 50,000 people into the area in the next 20 years. Such a
23 population would require some 10 million gallons of water a day or
24 approximately 11,000 acre feet of potable water. What is the source
25 of supply for this population?

1 7. Others have touched on the need for maintaining the
2 quality of water according to the Water Pollution Act of 1972. There
3 must be full control of water effluent by 1976, yet no mention is made
4 on the proposed implementation of such a program in the draft.

5 8. Most of our reservations revolve around the overly opti-
6 mistic considerations of groundwater according to the draft. Most of
7 this optimism is based on a lack of knowledge of the environmental
8 effects, as in Volume 1-III-31. Available groundwater of questionable
9 quality is conditional at best.

10 a) The solution to the unavailability of quality water is
11 treated on p. V-4. Monitoring of water is proposed, but the
12 action to be taken if the supply proves to be adverse is
13 left unanswered.

14 b) There is no record of any ground water near the
15 proposed areas which will meet the recommended federal
16 standards of less than 500 mg/L of TDS (total dissolved
17 solids). Any amount which might be found would undoubtedly
18 be depleted in a very few years. The vast amount of ground-
19 water in the area, and especially that which will be brought
20 to the surface after a few years of operating open pit
21 mines, is of unbelievably poor quality. Some wells to the
22 east of the Piceance Creek Basin have produced water two
23 times as salty as sea water, and the minerals found are
24 primarily sodium bicarbonate and sodium chloride, which are
25 amount the most undesirable possible in this area.

1 9. Vast amounts of highly saline water, which cannot be used
2 in the process, must be disposed of in some way. The report mentions
3 "treatment" of this water in a number of instances; but today there
4 exists no economically feasible method of removing sodium and chloride
5 ions from solution, and thermodynamic considerations (which have
6 extremely high energy requirements) indicate that no such method is
7 likely to be developed in the foreseeable future. Bicarbonates can be
8 transformed through various processes to sulfates or chlorides, but
9 these are equally undesirable and virtually impossible to remove.

10 10. Since the salts cannot easily be removed from the
11 water, the only alternatives remaining are to remove the water from the
12 salts or to dispose of the water through deep pressure wells. The
13 possible deleterious effects of the latter are well enough known that
14 this process is no longer seriously considered in other waste disposal
15 projects in the country. Evaporation then remains the only feasible
16 alternative, and the costs of this, in both economic and environmental
17 terms, should be added to the process.

18 11. There is also the matter of leaching of salts from the
19 spent shale and over-burden deposits. The draft indicates this problem
20 has been dismissed completely on the basis of a single small scale
21 experiment which showed that moisture added to spent shale caused an
22 impervious layer to form on the surface, thus preventing the downward
23 percolation of rainfall or other applied water (page I-25). In
24 numerous other places in the report, however, are illustrations of
25 the revegetation procedures which are proposed for the waste piles.

1 Since the roots of surface vegetation, combined with soil micro-organisms
2 working in the organic context of the soil, inevitably result in a very
3 high infiltration rate, it will be impossible to have both revegetation
4 and an impervious cover.

5 If the choice is revegetation, much of the rainwater, plus
6 the proposed 12 inches per year irrigation water to be applied to the
7 restored plots, will percolate downward through the soil. Unlike the
8 natural soil cover, which has been thoroughly leached of highly soluble
9 minerals over the centuries despite the relatively low precipitation,
10 the new "soil" will be composed of finely divided particles with a
11 high pore space fraction (even after compaction) and will contain
12 extremely high contents of sodium, bicarbonate, and, in some cases,
13 chloride. The resulting leachate can be expected to have concentrations
14 of their constituents comparable to that of the deeper groundwater.
15 Because of the fact that the tailings piles must be at high elevations
16 relative to the valley bottoms, and also because of the high porosity
17 of the tailings, this highly saline water will inevitably reach the
18 surface streams, resulting in further contamination of the already
19 saline Colorado River which will be of considerable magnitude.

20 The other alternative, that of retaining a barren cover
21 on the tailings, will actually have similar results. Since much of
22 the precipitation in the area comes from brief but intense thunder-
23 showers, considerable erosion can be expected from a vegetation-free
24 surface. Again, unlike the runoff from the present natural surface,
25 the silt carried off by the streams will contain a sizeable fraction

1 of soluble minerals which cannot be removed by settling alone. The
2 end result will be, just as above, pollution of the Colorado River of
3 the type which will be most damaging of all.

4 This pollution is likely to go on for centuries after the
5 oil shale operations have ceased, and is likely to become one of the
6 major contributors of salinity in the Colorado River. It is absolutely
7 impossible to achieve the contradictory results foreseen by the USDI
8 (revegetation plus an impervious, non-polluting surface layer) in
9 its analysis of this source of pollution, and the neglect of this
10 serious problem in the environmental statement indicates a seeming
11 disregard for the welfare of the nation on the part of those who have
12 been charged with protecting the public's interests, for though
13 adverse environmental impacts are mentioned in the draft, the green
14 light is being given to a prototype industry. We feel that the
15 above real concerns to the people of Colorado and Colorado River
16 water users have to be answered before any further development is
17 approved on Federal lands.

18 GARY PARRISH

19 MR. PARRISH: My review of the draft environmental statement
20 concerns socio-economic planning. How will the development effect
21 the existing population, and how will new people be provided with
22 necessary services? The statement is very inadequate in this area.

23 Many people viewed the National Environmental Policy Act
24 of 1969 as an end to planning in a vacuum. Section 102 of the Act
25 requires that:

1 A. A systematic, interdisciplinary approach be utilized...

2 C. A detailed statement on

3 (i) the environmental impact of the proposed action

4 (ii) any adverse environmental effects which cannot be
5 avoided...

6 (iii) alternatives to the proposed action

7 F. make available to the states, counties, municipalities,
8 institutions, and individuals advice and information useful in restoring,
9 maintaining and enhancing the quality of the environment. In my
10 opinion, unless the socio-economic considerations in the final impact
11 statement substantially enlarge upon the draft comments, the
12 environmental impact statement on oil shale production will be seriously
13 deficient.

14 The draft environmental statement does not adequately cover
15 several major impact areas. The first is the possibility of varying
16 population levels. Oil shale plants could be started up, run for a
17 period of time, then shut down--restarted--and shut down again.
18 Economics plays a part in this possibility and relates directly to our
19 energy needs. It is felt that a comprehensive energy policy is needed
20 to truly evaluate the likelihood of this impact. Without such a
21 policy there is much more chance of a "Boom and Bust" situation. The
22 statement does not concern itself with the boom and bust potential,
23 a very real possibility. The writers of the statement should look into
24 the impact of shutting down the ABM construction projects, the problems
25 created in many areas of the country with the construction of missile

1 bases, and problems in areas like Las Cruces, New Mexico, whose
2 economic well-being goes up and down as government contracts come
3 and go at nearby White Sands Missile Range. A complete study of
4 our energy requirements would provide a better look at the future
5 of oil shale, as well as the need to develop other resources. Similarly,
6 the draft statement does not adequately consider decreased per capita
7 energy demand in the future as people readjust their energy-use
8 habits. Pollution control programs and other cost-increase pressures
9 may easily raise the cost of certain forms of energy to a level at
10 which many consumers will change their habits. For example, as the
11 costs of operating a private automobile increase, any car owners may
12 choose to rely more on mass transit, decreasing projected demands
13 for gasoline and oil. Would we still need to develop oil shale at
14 this point in time? What would be the socio-economic impact of
15 curtailing oil shale production at some future date because of
16 such decreased energy demand?

17 The second area which the statement does not cover and
18 which cannot really be evaluated without a good study of our future
19 energy needs concerns the impact of a fully-developed oil shale
20 industry. In short, what is the impact of an ongoing oil shale program
21 expanded far beyond the proposed leasing? If economical production
22 of oil shale is achieved and energy demand is sustained, what is the
23 impact of the ongoing program? This is an area which needs to be
24 covered in detail.

25 Once the various impacts are defined in detail, it is then

1 possible to work on solutions to the problems, rather than just say
2 there are problems. Some of the potential problems can be solved
3 by Federal actions, and others could at least be presented to the
4 states, counties, and municipalities, with possible solutions as
5 required by Section 102(F) of N.E.P.A.

6 The third area is land speculation. Any potential influx
7 of people can cause land speculation. Speculation in land causes
8 an increase in land values, and in turn an increase in property taxes.
9 The speculator generally is favored by our tax structure on
10 both the Federal and State levels, while the people in the area not
11 wishing to sell their land have a very real problem. The increase
12 in land value and taxes is not matched by an increase in productivity
13 of the land. In many parts of Colorado people are being forced off
14 the land by increasing taxes based on speculative land values. What is
15 the impact of land speculation on the present population? What can
16 be done to minimize or alleviate the impact of land speculation?

17 Fourth, with the first influx of people comes the housing
18 impact. Anyone who goes into a boom area is familiar with what happens
19 to housing. The house that once rented for \$80/month goes to \$160/month
20 as construction starts and to \$240 and up as people flood into the area.
21 This is fine for the people who benefit from the boom. The wages
22 of the construction worker may reflect high housing costs, but
23 what is the impact on the person who pumps gas or works in the
24 local store? What is the impact on a large percentage of the existing
25 population to whom the project will mean higher costs with no

1 equivalent increase in income? What actions should be taken to protect
2 these people?

3 A fifth impact which has not been adequately considered
4 is the potential influx into the area of people looking for work,
5 people who do not have jobs, and may not even be qualified for
6 employment in oil shale, but who are drawn to the area in search of
7 some kind of employment or a better paying job. Just what is the
8 potential? What is the impact on services or welfare rolls? And what
9 is proposed to control or eliminate this potential problem? Similarly,
10 will this project add to the state's total population? Can preference
11 be given to people in the particular states who are unemployed or
12 under-employed? Can population be relocated from presently congested
13 urban areas in Colorado and Utah into the areas where oil shale
14 is being developed? Or will additional people be brought in from
15 outside the area?

16 There are many problems created by a growing population.
17 First, as an area becomes urbanized, there is an increased requirement
18 for services. Many of the required services are in existence, but
19 would require expansion. Others may not be presently provided or if
20 provided will require up-dating far above the level of services
21 presently provided.

22 The first problem in providing services is timing--having
23 the services ready when the people are there. Construction often
24 requires more people than plant operations; even if the numbers are
25 equal, there can be an overlap, operating personnel on hand during

1 construction or a gap between construction and plant start up. The
2 draft statement assumes a smooth transition between construction
3 and plant start up and a continued steady operation. To restate the
4 boom and bust potential, there is the potential for a widely fluctuating
5 service demand which is not covered in the statement. A second
6 problem that goes along with the first is how to finance the services.
7 As in many present urban areas, it is possible that the requirement
8 for residential services will be in one area, while the industrial
9 or business tax base is located in another area. The impact statement
10 points out this problem for Colorado, but does not suggest any
11 solutions. Yet there are several possible solutions. The Federal
12 Government could rewrite the lease so that the plant becomes Federal
13 property and thus does not go on the tax rolls. The lease could
14 require that payments be made on a voucher system in lieu of taxes.
15 This system is presently used by the Federal government to provide
16 aid to schools in areas of major governmental installations. Or as an
17 alternative a regional authority could be established by the states
18 or districts involved. The Federal in lieu of tax-voucher system
19 would be easy to establish but would not cover any developments
20 outside of Federal lands. A regional system would cover both
21 private lands and facilities on Federal properties, but with
22 the problems of intergovernmental cooperation that presently exist, a
23 regional government would be hard to form.

24 Similarly, unless there is a very high probability of a
25 continued level of a demand, then alternative methods of financing

1 capital investments besides the issuance of municipal bonds should
2 be considered. Schools, water and sewage facilities, etc. are
3 normally financed by long-term bonds. The refunding of said bonds
4 is normally figured on increasing use. So if for any reason the number
5 of users decreases, the remaining people are left with an overall
6 lower level of income and a higher tax bill not to mention a stagnant
7 economy.

8 Since the "crude oil" is being sent out of the area for
9 further processing, what is the impact in terms of population, pollu-
10 tion, etc. on the area where the refining will be provided?

11 Due to the length of the draft statement, and the general
12 unavailability of the statements, an additional 30 days to file
13 written statements is requested. This would provide citizens time
14 to do a more detailed study of potential problems and solutions to
15 the problems than we have been able to make at this time.

16 In addition, as a private citizen, I would like to make one
17 final comment. It is evident from all the testimony we've heard
18 today that this nation is in drastic need of leadership from the
19 top in the area of resource utilization and energy demand, and this
20 type of leadership is simply not present at this time.

21 Colorado primary elections illustrate the pitfalls of
22 politicians who continue to refuse to recognize the demands of the people
23 for truly balanced leadership in the direction of the utilization of
24 our finite supply of natural resources including oil shale resources and
25 environmental resources.

1 MR. DAY: Mr. Charles D. Hoertz, Ashland Oil Company.

2 CHARLES D. HOERTZ

3 MR. HOERTZ: Mr. Chairman, ladies and gentlemen, my name
4 is Charles D. Hoertz, Manager of Research & Development, representing
5 Ashland Oil, Inc., of Ashland, Kentucky, an independent refiner
6 which processes over 350,000 barrels of crude oil daily.

7 We have reviewed the draft environmental impact statement
8 submitted by the Department of the Interior on the proposed prototype
9 oil shale leasing program. We appreciate the tremendous amount of
10 work and time which is reflected in this three-volume statement.
11 Staff members of the Interior Department and the various state and
12 federal agencies are to be commended for their efforts.

13 Ashland Oil is involved in the energy industry at both
14 the domestic and international levels and is deeply concerned with
15 the timely development of a viable shale oil industry. As an
16 independent domestic refiner, we find our corporate position analogous
17 to the energy profile of the nation. In terms of crude oil it is
18 even more critical. In order to supply our refineries we have to
19 bring in nearly 30 percent of the crude from outside the continental
20 United States, and believe this quantity of foreign oil will need
21 to be increased substantially within the next year, as will the nation's.
22 We note that domestic reserves are being consumed more rapidly than
23 they are being replaced, and our need for foreign crude is increasing,
24 as is the nation's.

25 Our concern, however, is not limited to that of a competitive

1 company in the energy industry. Rather, it reflects the much
2 broader need of our nation to maintain adequate energy resources for
3 national security and economic purposes. I would like to elaborate
4 on these two points briefly.

5 First, as noted in the impact statement, the United States
6 has a growing demand for energy. The Department of the Interior,
7 in its most recent report on the energy outlook for the United States,
8 forecasts that the per capita demand for energy will increase
9 70 percent by 1985. Known reserves of energy from currently available
10 traditional sources within this country cannot meet this expected
11 demand.

12 We are now some 1.5 million barrels per day short of
13 crude oil that we must cover by imports along with another similar
14 amount of residual fuel oil, and our dependence on foreign sources
15 is increasing.

16 The majority of the world's oil reserve--and oil is the
17 principal form of energy utilized today--is located in the Middle
18 East. Without intended detriment to the governments of these Middle
19 East countries, theirs is a long history of political instability and
20 insecurity. Daily developments in these countries attest to this
21 circumstance. For example, just last week several major western oil
22 companies agreed to a new arrangement with the Persian Gulf states
23 which would reportedly provide these Middle East nations with as
24 much as 51 percent ownership in petroleum production formerly controlled
25 by the oil companies. A House Foreign Affairs report issued the same

1 day urged the U. S. to "take all possible steps to minimize our
2 future dependence" on these energy sources. This report said the
3 Middle East countries "hold the trump cards" in dealing with
4 industrialized nations. We, as a nation, cannot rely on increased
5 imports of energy from foreign sources to meet our needs. From a
6 security standpoint alone, the need to maximize domestic energy
7 resources is obvious.

8 Second, the news media is continually highlighting the
9 international economic situation of the United States. An example
10 of our present position was recently demonstrated by the devaluation of
11 our currency to place us in a more favorable--and competitive--position
12 in foreign trading.

13 Imbalance of payments between the United States and
14 foreign governments is now a serious problem. If we are forced
15 to import more energy sources, our country's international trade
16 position would further deteriorate.

17 Our present emergency has not entirely arisen from
18 international factors, but stems from our burgeoning national needs
19 and our new awareness of environmental needs. The measures promul-
20 gated and planned by the Environmental Protection Agency have compli-
21 cated and made refinery processing more expensive. "Clean air"
22 measures force a greater use of crude oil and gasoline than before.

23 Measures of increasing severity have reduced coal operations
24 in many areas. Construction of nuclear powered generating plants
25 have been retarded by environmental arguments. New Federal regulations

1 governing automobile emissions are estimated to increase petroleum
2 consumption demands in the United States by as much as 1.3 million
3 barrels of crude oil per day when they are in full effect.

4 It is obvious that development of additional forms
5 of domestic energy supplies is necessary. And of the domestic
6 energy resources, the one with the highest potential is the vast
7 shale oil deposits in Colorado, Utah and Wyoming.

8 Oil shale's potential has been discussed for more than
9 fifty years, but several factors have prevented the full scale
10 development of this technology.

11 Economics is one such factor. Because of the processing
12 expense of oil recovery from shale, this approach could not compete
13 with cheap domestic or foreign crude oil supplies available in the past.

14 Until recently the technology was not proven. And, even
15 now, although successful pilot plant and semi-works studies have been
16 conducted in recent years, many problems still exist with the mining
17 and retorting methods.

18 A prototype program could be the most practical avenue to
19 resolving these various problems and we must proceed immediately.

20 As the impact statement says, "Delay or postponement of the
21 proposed program may reduce the available time that is needed to
22 resolve many technical and environmental uncertainties...Prolonged
23 delay may leave no alternative but to react eventually with a crash
24 program to develop shale oil."

25 We believe the impact statement's conclusion is far too

1 conservative. We are in a critical situation now. The crisis
2 is not in the future but in the present. Therefore, we believe
3 this prototype program is imperative and the sooner it is implemented
4 the better.

5 Finally, I would like to comment briefly on the possibilities
6 such a program offers.

7 First, it offers an unprecedented opportunity to apply
8 the knowledge gained over recent years in environmental protection.
9 The impact statement section detailing the proposed lease program
10 outlines built-in safeguards to insure sound ecological practices in
11 the areas of air, water and solid waste pollution.

12 Second, the project as a whole could become one of our
13 nation's first attempts into total resource management. The prototype
14 program offers the opportunity for latest advancements in technological,
15 sociological, and ecological practices to be applied and evaluated.
16 Information gained from such an experiment would have further applica-
17 tion throughout the industry and nation.

18 Let me elaborate on this point. Most industries now
19 in existence have developed haphazardly over the years. Because
20 of the lack of knowledge of the full interplay of social and technical
21 sciences involved, errors have been committed that are only recently
22 being corrected.

23 In the oil shale leasing project, we would in effect
24 start at ground zero to develop an entire new industry--one guided
25 by the new-found knowledge and concerns of our country. It would be

1 a massive undertaking, requiring much flexibility and the full
2 cooperation of government agencies, private interest groups,
3 and industrial operations.

4 In summary, Ashland Oil supports the concept of a prototype
5 oil shale leasing program, and believes it is essential to the nation
6 that it succeed. As a prospective participant in such a program,
7 Ashland Oil agrees with the findings of the draft impact statement
8 and considers it an adequate review of the factors involved. Ashland
9 Oil believes the program proposed can achieve immeasurable benefits
10 to America.

11 Thank you.

12 MR. DAY: Carl J. Snow.

13 JEANNE P. FOSTER 1/

14 1/ MRS. FOSTER: I am Jeanne P. Foster and I am appearing here
15 on behalf of Mrs. Snow whose employer found it economically unfeasible
16 to let her off today. This is to the Chairman, Oil Shale hearings and
17 regards the impact of oil shale development in Colorado on birds of
18 prey.

19 Mention has been made in the environmental impact statement
20 of the fact that eagles and hawks are year-long residents of the
21 Piceance Creek area. Mention has not been made of the fact that this
22 area is also a portion of the major wintering ground in the state
23 of Colorado for golden eagles. Also, the stretch of the White River
24 between Meeker and Rangely is a major wintering area for bald eagles.

25 The pressure of increased human activities in these areas

1/ Transcript garbled at this point. Other information indicates that this statement was made by V. Crane Wright.

1 may be sufficient to force the eagles into less than optimum habitat.
2 This could be especially detrimental for the bald eagle, which is an
3 endangered species. If these birds are forced into areas which are
4 already occupied by other eagles, the amount of food and shelter
5 available to each eagle will decrease, and in fact may be a critical
6 enough difference that mortality may increase.

7 There are perhaps 750 breeding pairs of bald eagles in the
8 continental United States. The loss of even a few more bald eagles
9 than usual through displacement or actual harassment from oil shale
10 activities could have a significant effect on the total bald eagle
11 population.

12 The population status of other species of birds of prey
13 would also be affected. Many hawks and owls are quite intolerant
14 of human activities and will not reproduce during breeding season.
15 The disruption of suitable nesting habitat through oil shale activi-
16 ties would also be detrimental to their welfare. Total populations in
17 these areas could be seriously reduced. Since the status of several
18 species such as the ferruginous hawk and burrowing owl is undetermined,
19 the overall impact of oil shale development on birds of prey may be
20 even greater than is initially suspected.

21 Upon examination of the impact statement, I could find no
22 listing of the species of hawks and owls resident in these areas,
23 nor were there any population estimates. I do not believe that
24 adequate investigations were conducted to determine what impact oil
25 shale development will have on birds of prey. Such studies as necessary

1 should be conducted before any actual prototype development begins.

2 Thank you.

3 MR. DAY: Mr. Donald Davis.

4 DONALD DAVIS

5 MR. DAVIS: My name is Donald Davis, and I am speaking as
6 a private individual. I would like to be rather brief in my remarks,
7 since I have not been able to read the draft environmental statement
8 except in a very brief statements. But it has been my impression
9 that the details that have been emphasized a great deal by most of
10 the speakers at this hearing have not considered to the extent that
11 might be done the overall implications of what is being considered
12 here. We seem to have the prototype developments under consideration.
13 An industry which would involve much more enormous mining activity
14 than has ever been done on earth before as far as I know at least.

15 Although the industry representatives in the draft
16 statement have considered the environmental impacts of this, it
17 would seem they have not been very convincing to the effect that
18 more than a token amelioration of these effects could be accomplished
19 by this. Now I think of the earlier involvements in potentially
20 enormous alterations of the environment. But perhaps our best guide is
21 what has happened. From the closest approach to this which has been
22 done in practical activity in the past, and see the effects of large
23 scale mining on people living in Colorado near the Climax area. It really
24 has been enormously devastating to the area of that mine, and while
25 those people speak of the various factors to be dealt with--the new

1 techniques.

2 They seem to be confident that they can do it. I submit
3 that we have no real reason to believe that this is true and that
4 the effects, first of all, from indirect dumpings of the tailings
5 of the mine are obviously going to be devastating. One of the
6 last speakers, in fact, emphasized the fact that you could not have both
7 revegetation and impervious and relatively non-errodible conditions
8 that are non-productive mineral contaminants of water.

9 Then, of course, you have the population difficulties involved
10 in grossly increasing the population west of the slope by the people
11 involved in this industry moving in; and then you have the air and
12 water problems and various people have submitted suggestions as to
13 what could or could not be done about this--contradictory suggestions
14 which are not again, very comforting with regards to the actual
15 likelihood that they can really not only prevent damage, because
16 as the Atlantic-Richfield representative said this morning, actually
17 improve the environment.

18 This seems incredible that the environment could be
19 improved by this sort of thing. I submit really that what we should
20 be considering is not the simple issue of oil shale along, but the
21 overall situation which has led to our considering it in the first
22 place, that is the social situation in the United States and, indeed,
23 all the industrialized cultures that leads to the remarkable situation
24 which is expressed in the draft statement where we have an increasing
25 demand for energy--four percent a year was said at one point--where the

1 population is increasing only by about one percent a year. It's almost
2 alarming, but we should ask the question rather as to why this
3 energy requirement should increase at four percent a year, and
4 what will happen in very short order in terms of effectiveness perhaps?
5 Perhaps even less if it continues to increase at this rate.

6 It seems inconceivable to me that any form of energy could
7 be adequate to deal with such insatiable demands by huge numbers of
8 people. We simply can't do this indefinitely, and we should start
9 seriously--and I do mean seriously--not superficially, considering
10 alternatives to this continued increase in both the population and
11 the demands made by the population on resources, energy, as well as
12 other resources. If we do not do this, I can only see cataclysm
13 ahead.

14 The technical advances that the industry representatives
15 seem to feel will deal with the adverse effects of this are at best
16 dubious, and we can only look into the technological advances of the past
17 and the great claims that were made for them--and I have in this case
18 pesticides in mind. I only find that the more such advances are
19 made, the more problems that are unforeseen seem to come with them.
20 So that I would like to call now for a reassessment of our entire social
21 pattern and our aims as a society before we consider further devastating
22 and enormously larger effects on the environment. Not only in this,
23 but in other fields--the harms which have been done in the past.

24 Thank you.

25 MR. DAY: Mike Lelas

MIKE LEKAS

MR. LEKAS: Geokinetics has been requested by the Department of the Interior to comment on its draft environmental impact statement for the prototype oil shale leasing program.

We fully support the goal of the program as stated in the environmental statement as follows:

"The goal of the Department of the Interior's proposed prototype leasing program is to provide a new source of energy for the nation by stimulating the timely development of commercial oil shale technology by private enterprise, and to do so in a manner that will assure the minimum possible impact on the present environment while providing for the future restoration of the immediate and surrounding area."

However, we find that the proposed procedures for awarding the leases are contrary to the goal of the program, and in various ways would be harmful in establishing a health, competitive and technologically advanced oil shale industry.

In the proposed procedure, the leases would be sold to the highest cash bidder. No other consideration would be involved other than certain general guidelines to protect the environment.

We feel that procedures should be developed by Interior, and incorporated into the selection procedure, to achieve the following objectives:

OBJECTIVE I

Guarantee that independent oil producers are represented in

1 this new industry, and that it does not become a monopoly of the
2 major oil companies.

3 OBJECTIVE II

4 Provide that those companies that lack adequate reserves
5 of oil shale land have priority in securing leases over those that
6 already hold adequate oil shale reserves.

7 OBJECTIVE III

8 Encourage testing and development of in situ technology
9 that would minimize surface impact, and could lead to lower cost
10 oil for the consumer.

11 We wish to comment further on these objectives. The
12 purpose of the leasing program, as stated in the impact statement,
13 is to provide oil shale land to industry in order that industry
14 may develop commercial oil shale technology. Only six leases are
15 offered, and of these, most of the interest centers on two leases
16 in the Piceance Creek Basin of Colorado. As an indication of
17 the interest in the Colorado leases, of 23 sites nominated by industry,
18 17 were in Colorado. The entire industry is competing for these
19 very few tracts. It is imperative, therefore, that the leases be
20 distributed in such a way as to guarantee the objectives of the program
21 rather than that they be sold to the highest bidders.

22 OBJECTIVE I

23 Various major oil companies control practically all of the
24 non-government oil shale land in the area. They have enormous financial
25 resources and could offer cash bonus bids that no independent or group

1 of independent oil companies could hope to match. Since the number
2 of desirable leases is very limited, the result of the present
3 bidding procedure would be to put the new industry entirely into the
4 hands of the major oil companies, that already control the private
5 oil shale land. Since the program announcement states that there
6 will be "no further leasing of government lands for an indefinite
7 period of time," these few companies will have established effective
8 control of the oil shale industry and all others would be excluded.

9 OBJECTIVE II

10 In many cases the private oil shale lands have been held
11 for many years by major oil companies that have made no determined
12 effort to put the lands into production. There are other companies
13 without oil shale lands that wish to acquire the government leases.
14 Those who already have oil shale lands do not need more to carry
15 out a development program. Therefore, those without lands should have
16 priority in the granting of the leases.

17 OBJECTIVE III

18 There are companies interested in developing new techniques
19 for extracting shale oil other than by the use of conventional mining
20 and surface retorting methods. A company that wishes to develop an
21 unproven process cannot pay a large bonus for the land on which to
22 experiment, for it has no way of knowing at the inception of the work
23 if its technique will be successful. Such companies must inevitably
24 be outbid by those who plan to use conventional technology. Thus, the
25 program allows no opportunity for the development of an in situ

1 technology that would permit oil extraction with minimum damage to
2 the surface, and that could lead to lower cost oil for the consumer.

3 Room and Pillar mining has been demonstrated in four large
4 oil shale mines in the Piceance Creek Basin and there are many large
5 blocks of land controlled by major oil companies that are more
6 amenable to this method than any of the six sites being offered for
7 lease. Therefore, none of the limited number of Federal leases
8 should be granted for purposes of Room and Pillar mining as there are
9 already adequate lands suitable for this purpose in the hands of the
10 industry.

11 MR. DAY: Gordon Rodda.

12 GORDON RODDA

13 MR. RODDA: This is a statement by Gordon Rodda for the
14 University of Colorado Wilderness Group. In addition to this statement,
15 we will submit a written statement at a later date.

16 Throughout today's hearings there have been many remarks
17 directed at inadequacies in the proposed environmental impact
18 statement. Others have noted deficiencies in the impact statement's
19 coverage of secondary projects, salinity, population growth, tailings,
20 the Flattops Wilderness deletions, power requirements, air pollution,
21 economic justification, the ability of the project to perform its
22 assumed stop-gap duties, and the overall magnitude of the project.
23 Having read parts of the statement, I have found it to be incredibly
24 vague and inadequate for a project of this size. It is precisely this
25 latter point which so disturbs me.

1 Given the magnitude of the problems that have been so
2 adequately criticized today and so inadequately covered in the impact
3 statement, I find it incomprehensible that the Department of the Interior
4 has neither impressed upon the public the importance of this matter nor
5 scrapped the project until a complete impact statement has been
6 written. The very lack of citizen representation at the hearing today
7 is evidence of the lack of publicity this hearing has been given.

8 Such secrecy will lead to further deterioration of citizen
9 support for potentially environmentally adverse projects within the
10 Rocky Mountain Region.

11 We regard this project as the greatest yet in a long line
12 of governmental attempts to press blindly forward with possibly
13 devastating projects without the benefit of broad-based citizen aware-
14 ness. We vigorously object to any further implementation of this
15 project until such time as a complete environmental impact statement
16 has been carefully scrutinized by a substantial sector of the citizens
17 of Colorado and generous consideration given to their responses.

18 Thank you.

19 MR. DAY: Raymond Mohr.

20 RAYMOND MOHR

21 MR. MOHR: My name is Raymond Mohr. I have come to this
22 hearing to speak on behalf of the Colorado Environmental Health Asso-
23 ciation. I do not speak for my employer, the City and County of
24 Denver, Department of Health and Hospitals.

25 It is my understanding that testimony taken at this

1 hearing should be directed to the preliminary environmental impact
2 study as provided. However, because of the exclusion of certain
3 areas of concern to my organization, reference to the study will
4 necessarily be oblique.

5 My testimony will cover anticipated impact on: health
6 services, medical and dental services and facilities, availability
7 of personnel in the health fields, water quality and supply for
8 municipalities, sewage disposal systems (both individual and municipal)
9 and other closely associated environmental health matters that will
10 occur when this area containing only 1.7% of the states population
11 becomes a small urban center in a very short period of time.

12 According to figures and statistics obtained from Colorado
13 Comp. Health Planning Council the entire northwestern area of the
14 state is woefully lacking a satisfactory health care system. There
15 is no organized regional or county health department, for intents of
16 and purposes, no hospitals or emergency care system, and only a small
17 number of doctors, dentists and other health professionals. Hence
18 if no effective health system exists one must be developed. This
19 raises some important questions. How will almost a complete
20 health care system be funded? Who will pay the cost of developing
21 and maintaining such a system? How soon would a health system be able
22 to be in operation? In my opinion the impact statement discusses
23 none of these problems. As a matter of fact, figures from the
24 state Comp. Health planning office show decreases in the populations
25 of Moffat and Rio Blanco counties through 1980. This indicates

1 possibly the impact study was prepared without consulting state
2 planning agencies.

3 The impact statement makes no mention of how municipal water
4 quality and municipal sewage effluent will be able to be maintained
5 in compliance with state and federal standards. Since over half of
6 the population is currently on a municipal system of some sort,
7 planning and funding will have to be done to ensure adequate, safe
8 water as well as complete and efficient municipal sewage systems in
9 the target area.

10 In closing let me say that I have not gone into detail at this
11 time but a more detailed critique of the impact statement will be
12 forthcoming by the October 23 deadline. I do want to reiterate the
13 intent of the Environmental Policy Act as I as a health environmentalist
14 interpret it. That is to ensure that actions of man will not endanger
15 the quality and health of the environment in any way.

16 MR. DAY: I think everyone has been called who wished to appear
17 today, and the hearing will stand recessed until tomorrow morning at
18 9:30 o'clock a.m.

19 (Whereupon, at 4:45 o'clock p.m. the hearing in the above-
20 entitled matter was recessed to be reconvened the following day.)
21
22
23
24
25

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR

In the Matter of:

DRAFT ENVIRONMENTAL STATEMENT
FOR THE PROPOSED PROTOTYPE
SHALE LEASING PROGRAM.

:
:
:
:
:
:

Federal Center Auditorium
Denver, Colorado
Wednesday, October 11, 1972

Met, pursuant to notice, at 9:30 o'clock a.m.

BEFORE:

JAMES M. DAY, Director, Office of Hearings and
Appeals, U. S. Department of the Interior.

PANEL MEMBERS:

REID STONE, Oil Shale Coordinator.

ANDREW DE CORA, Bureau of Mines.

ALBERT LEONARD, Bureau of Land Management.

KENNETH ROBERTS, Bureau of Sports Fisheries and Wildlife.

* * *

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1/ Joan Foster should read Mrs. Jeanne P. Foster.

2/ Bowman should read Bollman.

P R O C E E D I N G S

MR. DAY: The hearing will now come to order. The hearing is for the purpose of receiving comments on the draft environmental statement for the proposed prototype oil shale leasing program, as mentioned yesterday to obtain comments from those wishing to comment on the program. Those who desire to supplement their oral presentation at this hearing should send their information to the Director, Office of Hearing Appeals, 4015 Wilson Boulevard, Arlington, Virginia. They should be received on or before October 3, 1972, for inclusion in the record. A transcript of the public hearing will be prepared and the final environmental statement will reflect the comments at this hearing. Complete copies of the transcript can be obtained by making arrangements with the reporter. Copies of written statements can be directed to the Office of Hearings & Appeals and all comments will be carefully considered in the Environmental Policy Act of 1969. Are there any people here who desire to present a statement at this time?

MR. DAVIS: My name is Donald Davis and I am speaking for Mr. J. Blain Colton of the Colorado Grotto of the National Speleological Society.

STATEMENT OF MR. DAVIS

MR. DAVIS: It is the considered viewpoint of the Colorado Grotto of the National Speleological Society that the Interior Department's draft environmental impact statement is premature, inconclusive and wholly inadequate. We feel that the basis for this entire proposal is in serious question; ie. The National energy crisis.

1 There are a great number of effects by such an operation as oil shale
2 mining that have not been considered by the impact statement. These
3 things considered, we feel that the scope of the statement is far too
4 narrow and recommend that the statement be considered invalid.

5 We wonder if the Government is taking into consideration its
6 professed role as protector of the interests of its people or is merely
7 making feeble and destructive efforts to control an inflationary
8 economy. We recognize the merits of creating jobs but submit that the
9 price for these is too high.

10 In order to make a rational decision regarding the necessity for
11 oil shale development, the Interior should have at its disposal a compre-
12 hensive energy plan and review for projected energy needs for some time
13 to come. This document does not exist. Furthermore, it is our under-
14 standing that the Government cannot even agree as to what constitutes
15 usable energy much less define an energy crisis. It is because of this
16 inadequacy that we consider the draft statement premature.

17 The statement takes an amorphous stand toward environmental
18 impact in the immediate area of development and compounds its insufficient
19 scope by totally disregarding the impact on adjacent areas. Let us now
20 consider some of these impacts and hope that they will be weighed on the
21 viability scale along with other negative environmental impacts. These
22 make the oil shale proposal a proposal to commit one of the most
23 monumental acts of environmental vandalism ever planned.

24 The effect of oil shale development on caves, our field of
25 special interest, would be indirect, but nevertheless significant.

1 If you take the estimated 40,000 people required to operate
2 this industry, including the number of additional people, including
3 police, school systems, medical care and so on, you have a fair sized
4 city. In the mountains to the south and east of the oil shale areas,
5 we have one of Colorado's most unique and most fragile eco-systems.
6 The cave environment. This large influx of population will put a
7 large strain on all of the outdoor recreational facilities including
8 the caves.

9 Nature, fortunately, has a wonderful ways of regeneration
10 and if an area is over-hunted, if it has too many trees cut down or
11 if it is over-fished, it will regenerate itself to a certain extent
12 by simply restricting use of that area. Not so for the caves. While
13 it may take hundreds of years to reforest a forest, it takes millions
14 of years to create a cave. In short, the caves we have now are
15 essentially all that we will ever have. The predicted influx of
16 people to Northwest Colorado will be far more than the delicate cave
17 environments can bear without serious damage.

18 Of even greater consequence is the statement's neglect of
19 where the necessary water is to come from. This will have far reaching
20 effects and disastrous consequences if the industry is not restrained
21 in its acquisition of water. The oil shale industry should be
22 restricted in its use of water by a comprehensive state-wide water use
23 plan. This plan should be a guide for all future water use and a
24 realistic projection of needs. Again, however, such a document does
25 not exist. The impact of oil shale development cannot possibly be

1 determined without consideration of precisely where the water is to
2 come from.

3 Interior maintains that between 80,000 and 125,000 acre feet
4 will be used to operate the industry's projected production of one-
5 million barrels a day. Interior does not, however, consider the amount
6 of water to be consumed by the great population boost. Nor does it
7 consider the amounts of water consumed by the power plants necessary
8 to maintain the shale mining operation.

9 Interior does not mention where the water will come from or
10 how they propose to get it there. Furthermore, Interior does not
11 mention who will pay for it. Will Interior recommend subsidies from
12 random dam building only to find out that these won't provide enough
13 water or that the dams have reduced the runoff to the point where
14 downstream users are cut off? Will Interior recommend subsidies for
15 pipelines to bring in water from distant sources only to find out that
16 the industry is no longer economically feasible? Or perhaps dams will
17 be built just before we realize that fossil fuels are obsolete.

18 The Flat Tops primitive area and the adjacent White River
19 Plateau is the major source of water in the proposed oil shale area.
20 As it appears now, oil shale development, if it is pushed through, will
21 encourage the random placement of dams and canals as is evidenced by
22 the proposed Yellow Jacket Project. Not only do we find it absurd that
23 the people be forced to pay for destructive damming and canals on their
24 own land for private profit and negligible benefits but we find it a
25 crime that the monumental environmental impact go unregarded.

1 The Flat Tops water shed is a vulnerable and valuable natural
2 resource. Damming of the streams in the surrounding area will have very
3 great degrading effects. Not only will the dams and the lakes them-
4 selves be destructive, but they will require the creation of maintenance
5 roads in what is mostly wilderness, thus encouraging heavy recreational
6 use.

7 The Corps of Army Engineers is at this moment considering plans
8 to dam and divert the waters of Main Elk Creek, a small tributary of
9 the Colorado River. Damming this creek will have ill effects including
10 displacement of one of Colorado's few remaining big horn sheep herds,
11 inundating several caves and encouraging use of a heretofore pristine
12 area.

13 This is the prime reason the Review Committee should turn the
14 draft environmental impact statement down. As it now stands, the oil
15 shale proposal is encouraging random and unplanned development of areas
16 adjacent to development sites without having any realistic idea as to
17 what the ultimate cumulative impact will be.

18 These adjacent areas are one of Colorado's most important
19 natural resources and should not be jeopardized for an industry that is
20 not decidedly viable, desirable, or beneficial. It is for these reasons
21 that we call for the rejection of the draft and call for an end to
22 unplanned development until the industry is both proved necessary by a
23 comprehensive National Energy Statement and proved possible and justifi-
24 fiable by a complete study of available water resources and proved
25 rational by a complete environmental impact statement utilizing quantita-

1 tive estimates and complete projections of the amount of water to be
2 used as well as a complete study of the impact on adjacent areas.
3 Thank you.

4 MR. DAY: Thank you, Mr. Davis. Is there anyone else who cares
5 to make a statement?

6 MRS. GOODWIN: Good morning, my name is Libby Goodwin, and I am
7 President, Boulder Audubon Society.

8 STATEMENT OF LIBBY GOODWIN

9 MRS. GOODWIN: A primary goal of our local chapter is educa-
10 ting young and old alike to the marvels of the natural world around us,
11 exemplified by the intricate relationship known as the "chain of life."
12 To this end we have instituted an inventory in Boulder County of all
13 existing wildlife habitat and wildlife. This inventory will be used to
14 assist public officials in making informed and rational land use
15 decisions. Extractive industries in Boulder County are being asked to
16 present extensive evidence of the effects of their operations on wild-
17 life.

18 I believe the same principle should be applied to the proposed
19 oil shale leasing program. The wildlife habitat and wildlife of the
20 oil shale mining area are an intrinsic value of the State of Colorado
21 which should be available to all citizens to study, to enjoy, and to use
22 in the wisest way. It would be premature to give permission to mine
23 this area before an inventory is made of the existing wildlife popula-
24 tion. Then, and only then, can the effects of the mining program on
25 the wildlife be evaluated. Only then can an informed decision be made

1 which is in the best interests of all citizens of the state.

2 The Governor of Colorado has authorized a wildlife study which
3 would give the desired information. Until it is completed, the
4 environmental impact statement cannot present an adequate assessment of
5 the effects on wildlife of the air and water contamination which may
6 accompany the oil shale operation. If public lands are to be used for
7 the proposed program, the public is entitled to environmental investi-
8 gation which has thoroughly covered this important topic.

9 MR. DAY: Thank you. I will now call on Betty Willard.

10 STATEMENT OF BETTY WILLARD

11 MRS. WILLARD: Thank you, Mr. Hearing Officer. I wanted to
12 take a moment of time today to urge that as many people as possible say
13 what they think about the development as to what we need to know because
14 it is a very large area and the possibilities of great development are
15 there. In looking over the structure of these hearings, it will be
16 valuable for the citizens of this state and other states if we could
17 have more time beyond the 23rd in which to put together remarks because
18 most of the citizens are volunteers and they are working hard full time
19 at other jobs, so if we could have more time it would be appreciated,
20 Mr. Hearing Officer.

21 MR. DAY: Thank you, Mrs. Willard. A number of people have
22 indicated, in fact demanded and requested additional time. The panel
23 is now considering this and we are taking it under advisement and
24 will rule on it probably before the week is out. Are there any others
25 present who desire to make a statement?

STATEMENT OF JOAN FOSTER 1/

1 1/ MRS. FOSTER: I have to apologize to you gentlemen for not being
2 here yesterday afternoon when my name was called. I understood my
3 time was going to be given to somebody who could use it from out of
4 town. It is very possible that my remarks on the environmental statement
5 are going to seem very mundane and housewifish, compared to the...all
6 the expert testimony that has been going on.

7 MR. DAY: Could we have your name, please?

8 1/
9 MRS. FOSTER: Mrs. Joan Foster, housewife. Well, I'm a house-
10 wife and the housekeeping aspects of the environmental statement are what
11 concerns me because of the close parallel they bear on my own home
12 situation which I share with many homemakers. I have three teenage
13 sons and a husband who encourages them and shares in all sorts of
14 projects. I think this is wonderful. I admire their ability and ambition
15 to think in broad concepts and anticipate problems and successfully meet
16 the challenge.

17 The problem then is something like this--it's wonderful you
18 did it, it works, now who's going to clean it up? In my personal milieu
19 this immediately gives rise to dismay, bribery, even coercion. It's
20 kind of a let-down. After the euphoria of great achievement, they
21 have to get down to the boring nitty-gritty of cleaning up afterwards.
22 I don't know. Perhaps a mind that can deal in large concepts and make
23 dreams a reality is simply incapable of focusing down to a probably
24 messy aftermath, and I think that is precisely what has happened to
25 certain too-cheerful objections in the statement.

For instances, there is an impressive hunk of all sorts of

1/ Transcript garbled at this point - other information indicates that this statement was made by Mrs. Jeanne P. Foster.

1 measurements of the Colorado River and its watershed in the mountain
2 area. But nowhere is there any program for remedial action should
3 all these measurements indicate that a critical point has been reached
4 or passed, nor is there any basic data on which to make comparisons. I
5 don't like this. To me, any program that fails to consider all the
6 factors that can go wrong...I think we need to know whether we have
7 the authority to halt the program should, for example, increased salinity
8 downstream prove detrimental to the crops, and stock, and wildlife.
9 In fact, I'd like to know if there is any consideration of dealing with
10 the situation.

11 Now, I dare say that should oil shale development prove
12 economically unsound, there'll be little delay in closing the program
13 until a better method or source was found. However, should oil shale
14 development prove ecologically unsound, there is no assurance, no
15 authority to invoke a similar proposal. If the lack of provision is
16 although a serious oversight, not deliberate, then I should be forced to
17 wonder if the Environmental Impact Statement and this hearing too is only
18 an empty gesture--just put on. The statements made here in official hearing
19 are exercises in futility. The decision has already been made to
20 proceed regardless of the adverse discoveries. There are other house-
21 keeping, upkeep problems that bother me. Packed slopes with spent
22 shale are to be protected from hard surface run-off by conduits around
23 them and catch forms below. What agency or company is going to make
24 good these commitments and for how long and at what cost to the public?
25 Should they ever be abandoned, these slopes will easily become subject

1 to normal erosion processes. After all, that is how those box canyons
2 got there in the first place. It is accepted that spent shale is some-
3 thing like concrete when it is wet down and compacted and let dry,
4 but even concrete has a predictable life span. Are those slopes being
5 maintained until they leave or will nature be allowed to do its worst
6 sometime in the future, long after the program is over? And then will
7 that compacted shale deteriorate in the normal manner of original shale,
8 or at some independently accelerated rate because it isn't the original
9 shale; and that's the point. No one can say because no long-term studies
10 have been made, and so I'm disturbed that we may be leaving a problem
11 to our grandchildren. These scenic bluffs could be set aside as a
12 park or monument, and here we have it nominated as a dumping ground.
13 It sort of makes me wonder about the sense of value that judges the
14 scenic treasures on the basis of being a pat solution for those energy
15 problems. These are just a few of the unknowns in the proposed problem
16 that make a front-time schedule really completely mixed up. Let's set
17 aside our technology and find a way to start to work tomorrow while we
18 can. Now, we're creating some magic for technology. You gentlemen are
19 making a decision that will affect many generations and your decision
20 must be as comprehensive and responsible as you can make them for all
21 of us. Thank you.

22 MR. DAY: Thank you, Mrs. Foster. Is there anyone else who
23 desires to make a statement? Please come forward.

24 MISS BOWMAN:^{1/} Gentlemen, I am Sue Bowman of the Colorado Open
25 Space Council, Mining Workshop.

^{1/} Transcript garbled - should be Sue Bollman.

STATEMENT OF SUE BOWMAN 1/

The mining workshop is concerned about different aspects of mining, mining procedure, the environment of the area to be mined before and afterwards. We're also concerned about mining safety. Thus far, most of the discussion you have heard here has concerned the environment, economics, and production. But we feel there is another environment that is as crucial if not more so than the other dimensions and it needs more evaluation that's the working practices. The COSC Mining Workshop is quite concerned about the Department of the Interior's attitude toward health and safety for the oil shale miners. Throughout the 1150 pages of the Impact Statement all reference was made towards production and the environment and not one page--not one page--referred specifically to the safety of the miners except to mention that 1100 deaths may occur by 1980. Therefore, many of our questions are unanswered, and we feel some clarification is necessary before any further decision can be made. The room and pillar operations are outlined in a very sketchy form. We'd like to see more complete diagrams containing ventilation systems and the emergency exit portals. This data shouldn't be privileged information because it does concern human life and human health. We are also interested in learning more about the proposed electrical system for both underground and surface operations. What methods of dehumidifying the mine are proposed, and what guarantees are there that this mine will not be over or under dehumidified. Could the noxious gases associated with the room and pillar operation please be identified? Are these gases of an explosive nature? Could they

1/ Transcripts garbled - should be Sue Bollman.

1 asphixiate? Are they flammable? What procedures will be
2 used to prevent accumulation? Could the presence of diesel trucks and
3 explosives such as naphtha and dynamite cause the gases to explode?
4 What regulations are there on the amount used and the conditions that
5 are allowable for its usage?

6 The Impact Statement mentions 1000 tons of dust a day in this
7 underground operation. What kind of dust is it? What is its final
8 causes? What measures will be used to control this dust? How does it
9 compare to coal dust? And has there been any medical testing done to
10 determine if this dust can cause lung diseases similar to tuberculosis
11 or black lung?

12 The Mining Workshop also feels the roof controls and roof
13 bolting programs should have been included in this statement. What
14 governmental agency approves these plans? Will it be the Bureau of
15 Mines? What plans have been previously tried and proved for oil shale
16 rock? What is the history of roof falls in this operation and how
17 do these falls affect the men as compared to coal mining? Are there
18 more roof falls in this kind of rock? Are the injuries more severe or
19 less severe? What union will these employees be affiliated with? And
20 what state or federal regulations oversee their health and safety? I
21 understand it will be the Metallic Health and Safety Law.

22 MR. DAY: The Federal Metal and Non-metallic Mine Safety Act
23 of 1969.

24 MISS BOWMAN: And foremost among our questions, what type of
25 formal training program will be given to all employees--underground,

1 surface, in situ, processing plant, truck drivers, et cetera? Have
2 these programs been scrutinized by the governing agency, and what
3 special kinds of programs besides those outlined above will be instigated
4 by the agency and by the employers.

5 According to the Impact Statement:

6 "The health and safety statistics are available
7 for both underground and surface mining operations, the
8 technologies involved in oil shale mining and processing
9 make it anticipated to be closely aligned to surface
10 mining in terms of fatalities and accident rates."

11 Gentlemen, the deep mining is not comparable to surface mining.
12 You cannot compare the statistics of the two methods. Secondly, the
13 oil shale statistics should not be patterned after those of the coal
14 industry. The Bureau of Mines is a production oriented, not a safety
15 oriented agency. The oil shale industry should start out with different
16 standards and priorities than the coal industry, since human life is what
17 takes priority. Therefore, we feel that these questions must be
18 answered before any leasing program is initiated. Thank you.

19 MR. DAY: Thank you, Mrs. Bowman, anyone else?

20 STATEMENT OF BOB WEAVER:

21 MR. WEAVER: I'm Bob Weaver representing the Colorado Council
22 of Trout Unlimited. We have 12 Chapters with over 800 members here
23 in Colorado. Trout Unlimited has not taken a position either for or
24 against future oil shale development in Colorado. T.U. is mostly con-
25 cerned with problems associated with supplying water for oil shale,

1 population growth and irrigation for revegetation. We believe that
2 fisheries will be damaged more than the draft environmental statement
3 indicates, especially if the water is supplied by high country water
4 development projects like the Yellow Jacket, West Divide, Rio Blanco,
5 and Sweetbriar.

6 The Bureau of Reclamation's Yellow Jacket Project is really an
7 old-fashioned backwards method of supplying water for oil shale
8 in the Piceance Basin. High country dams and miles of canals like Yellow
9 Jacket, would seriously damage the entire watershed wildlife habitat
10 which is why the Colorado Wildlife Commissioners passed a resolution
11 two weeks ago opposing Yellow Jacket and similar projects on the White
12 River drainage above Meeker. We suggest that alternatives for providing
13 water be more thoroughly investigated, like taking water out of the
14 streams farther down. For example, take the water out of the White
15 River below Meeker instead of building Yellow Jacket, or provide water
16 by drilling deep water wells. This may cost more money, but that is the
17 cost of protecting the environment.

18 Furthermore, we question the legal authority of the Bureau of
19 Reclamation to build projects like Yellow Jacket which are primarily for
20 industrial purposes. The Bureau is charged with building projects
21 which are primarily for irrigation, not industry.

22 If the needs for oil shale are justified and national interest
23 dictates oil shale development, Trout Unlimited asks that it be done
24 in such a way as to minimize watershed damage. We will need more than
25 ever good land-use and water-use planning and safeguards to prevent
major environmental damage.

1 We hope the final environmental statement will provide answers
2 to these questions:

3 1. How much water will be needed for each use, including the
4 oil shale needs, the minicipal needs and the revegetation needs?

5 2. Where will the water for each of these needs come from?
6 High or low in the watershed, surface or ground water?

7 3. What will be the total environmental effects of supplying
8 this water?

9 Thank you.

10 MR. DAY: Thank you. Anyone else?

11 STATEMENT OF CAROLYN R. JOHNSON

12 MRS. JOHNSON: My name is Carolyn R. Johnson. I am speaking on
13 behalf of the Colorado Open Space Council Mining Workshop and Oil
14 Shale Committee. We are concerned about two broad questions that have
15 not been adequately answered in the Environmental Impact Statement.

16 Irretrievable Resource Commitment. The draft does not address
17 itself adequately to what will happen if, once initiated, an oil shale
18 industry on the public lands is not economically or environmentally
19 feasible. We need to know what criteria will be used to measure both
20 types of feasibility and the public must have a role in making these
21 determinations.

22 Oil shale development has been justified as an experimental
23 program leading to a partial solution of the so-called "energy crisis."
24 But any science student can testify that experiments often fail, despite
25 the best efforts of the investigator. We are asked to go along with

1 an experiment that must not fail, yet what guarantees success?

2 If shale oil does not fulfill the promise of becoming a
3 partial solution to the so-called "energy crisis," what other specific
4 steps will be taken to achieve the solution, which we are told is vital
5 to our survival as a healthy nation? It is indeed callous to ask
6 citizen approval of an experiment to solve a so-called critical problem
7 and not offer alternatives if the experiment fails. We ask that the final
8 statement honestly assess the potential for failure and the alternatives.

9 Reclamation Standards. The Mining Workshop has examined leases,
10 stipulations and reclamation results on public and private lands. The
11 oil shale stipulations and their administration and enforcement do not,
12 in our opinion, assure good reclamation in the public interest. To
13 substantiate this we offer the following:

14 1. The lessee conducts an environmental monitoring program
15 to check on his own compliance with laws and stipulations and to
16 determine conditions which require correction. After the recent Ford
17 Motor Company case of falsifying test data on automobile pollution
18 controls for the Environmental Protection Agency, we are aghast at the
19 proposal that industry can and will regulate itself. We need an
20 independent monitoring program outside the purview of industry.

21 2. The stipulations contain weasel words and phrases that
22 lessen the environmental protection measures, such as "...are prohibited
23 unless otherwise approved by the Mining Supervisor," "to the extent
24 practicable;" "except as permitted by the Mining Supervisor;" etc.

25 3. The lessee chooses which revegetation standards he must

1 meet. This must be an ecologically-based decision, not one at the
2 company's discretion.

3 4. The stipulations install the Mining Supervisor as omnipotent
4 exercising expertise in at least 20 scientific and engineering fields.
5 He and his staff do not have the capability or expertise to exercise
6 such broad discretionary powers. We feel there should be established
7 a scientific commission, including public representatives, to oversee
8 the environmental protection measures.

9 Additional comments on these points will be submitted as
10 written testimony.

11 Congratulations were echoed around this room yesterday. After
12 four years, Interior has delivered itself of a new oil shale baby and
13 this one is the spitting image of the daddy oil companies. The public
14 land pie is being divvied up--and some of the congratulating oil
15 companies are getting; we, the public, are being had.

16 We are not here to congratulate Interior on a job well done in
17 our public interest. Instead, we'd like to offer our sympathies.
18 Sympathy to those federal employees who are trying to do a conscientious
19 job, but have been steam rolled by the rush-rush schedule of oil
20 shale development. Sympathy to those elected state and federal officials
21 who still cannot realize the shallow boosterism is no longer a ticket
22 to office. Condolences to the public--because if oil shale is developed
23 under the present Interior program--we and future generations will lose
24 the most.

25 After the hearings yesterday, one of the gentlemen monitoring

1 these proceedings suggested that he felt the final Environmental Impact
2 Statement needed only to clarify some points in the draft to satisfy
3 the issues raised here yesterday.

4 Gentlemen, there is no way you can band-aid this final state-
5 ment to acceptability in the near future. Some of the substantial
6 points raised were these:

7 1. The basic research on air, wildlife and water, community
8 and sociological implications is not available. This research takes
9 time but must be obtained before the final statement is completed. It
10 is necessary before any further decisions are made.

11 2. The economic feasibility of oil shale development on public
12 lands must be thoroughly explored and the necessary subsidies made
13 explicit.

14 3. The environmental impacts of secondary facilities--such as
15 dams, water diversions, power plants, pipelines, roads, etc.--must be
16 considered in depth and at the same time as those of oil shale plants
17 themselves. The test of these is: Would these secondary facilities
18 be built if there were no oil shale development? Or, phrased another
19 way, is oil shale development viable in isolation, without these
20 secondary facilities?

21 4. Assurances in the draft that Interior and the oil companies
22 will allow only minimal, if any, adverse effects to occur are not
23 sufficient. We have to know what specific technologies and methods
24 will be used and their impacts.

25 5. A national energy policy is necessary before the public can

1 approve another major public resource is developed.

2 Gentlemen, for the last several years we have been trying to
3 send you a message on oil shale and resource development as a whole.

4 We have been excluded from Interior's decision-making process
5 from the very beginning. We were not allowed to help design an energy
6 policy or an oil shale program within that policy's context. We were
7 shut out of the deliberations on leasing, tract selections, and evalu-
8 ations. Our requests for authorizing and funding the research as the
9 necessary groundwork before any decision-making could be undertaken
10 were ignored.

11 The expertise and constructive criticism from within Interior
12 itself has either been ignored, untapped, or shoved aside with the
13 rationale that oil shale development must be kept "on schedule."

14 Evidently, the lessons of the Alaska Pipeline, Black Mesa, and
15 East Meadow Creek have not been learned yet. We want a healthful
16 environment. We want to be consulted in the decision-making. We
17 want a Governmental climate that nurtures the very best performances
18 from its capable employees. But we have been frustrated in our efforts
19 to attain these very simple goals.

20 Gentlemen, the pipeline, Black Mesa and East Meadow Creek may
21 have sounded the call-to-arms in the battle for the West.

22 But we would prefer that they sound the dying retreat--an end to
23 hasty development schedules allowing no time for thorough work; an end
24 to agencies just meeting the legal requirements, but ignoring the
25 spirit of the National Environmental Protection Act; a stop to political

1 decisions and campaigns determining resource development programs; an
2 end to Government run by bull session.

3 We offer Interior a challenge: Use your talented people, do
4 the necessary research, be flexible, consult with citizens, propose
5 comprehensive environmental protective programs.

6 The results could be exciting, innovative, and satisfying.

7 MR. DAY: Thank you, Mrs. Johnson. Anyone else?

8 STATEMENT OF V. CRANE WRIGHT

9 MISS WRIGHT: I would like to thank the Bureau of Land Manage-
10 ment and the Department of the Interior for giving us this chance to
11 comment on the draft Environmental Impact Statement on the proposed
12 prototype oil shale leasing program. I would also at this time like
13 to point out that even though COSC has been involved in this project
14 since 1968, this is the first time that the citizens have been allowed
15 to comment publicly. Although there were Senate hearings held in
16 November of 1971, they were closed to everyone except government and
17 private industry.

18 We would hope that these three-state hearings are only the
19 beginning of open, public hearings to be held throughout the rest of
20 the United States before any final decision is made to develop oil shale
21 public lands. Since these lands belong to all our people, an oppor-
22 tunity to speak and join in the decision-making process would seem
23 necessary.

24 There is a strong feeling among a large segment of our popula-
25 tion that the public has been abandoned. Those very people who should

1 be speaking on our behalf, who should be the watchdogs of our public
2 lands, who should be passing the laws protecting our public heritage--
3 those very people appear to be in partnership with the exploitative
4 extractors of these, our lands. At a time which calls for fiscal
5 responsibility and the priority of human values over a "fast buck",
6 something seems awry. The campaign dollar is setting our policy and the
7 lobbying dollar, not the taxpayer's dollar, dictates our budget. Behind
8 a banner of "energy crisis" we seem to be saying, "Damn the consequences,
9 full development ahead." There are those of us who believe not so much
10 in the "energy crisis" as in a crisis of permissiveness. We believe
11 we are exploiting our natural resources--not for proven human needs, but
12 for the ever-beefed up advertising demands.

13 We need our national leaders to speak on our behalf. It is
14 not enough for these leaders to extol us to national unity when at the
15 same time, they polarize our people by turning us into regional chauvin-
16 ists--Alaskan oil v. offshore drilling v. deep water terminals v. oil
17 shale. We need our leaders' guidance and their initiation of a
18 comprehensive national energy policy. A policy which will put all these
19 sources of energy into perspective and allow us all, as one united people
20 to have a hand in our decisions for the future of energy development.

21 We need our politicians to set our laws, protect our lands,
22 and guarantee the future of the generations to come. These politicians,
23 we are told, are busy finding the answers to our "energy crisis",
24 but they are not here among us to hear their constituents' questions.
25 They are off playing the game of "trade-offs"--trading our living land

1 for grey ask, our wildlife for zoo animal oddities, feeding an obsolete
2 monster, the internal combustion engine, with further ribbons of road
3 that necessitate projects like oil shale. We need our loyal public
4 servants--the professional stewards of our public lands, and given the
5 chance, they are loyal.

6 In this particular instance, we feel strongly that not only
7 are their hands tied, but in many cases their necks are in the noose.
8 Other people have spoken of the social, human impact that this project
9 will have on the communities that will have to suffer the increase in
10 population and all its inherent problems. No one yet has spoken of the
11 torment of a man who is not allowed to do his job, because of pressures
12 exerted above and beyond his control.

13 (Aside to Stone) Much technical data has already been given,
14 many questions have already been raised. We are today left with the
15 impression that we are not so much being listened to as we are putting
16 in our time to comply with NEPA. I would like to mention two omissions
17 in alternatives which were barely touched on at these hearings.

18 One, the alternative of doing nothing to these lands--since
19 they are already a viable eco-system that perhaps does not need the
20 manipulation of man's hands.

21 Two, Mr. Stokes briefly touched on how royally we, as a people,
22 will have to pay for the royalties we are told we are getting. Over a
23 20-year period we will be receiving approximately \$50,000 for the leasing
24 of this land, and a little over this amount in actual royalties.
25 However, the land itself on the open market would bring in, conservatively,
over \$10,000,000. I propose therefore that the alternative of outright

1 sale of these lands to industry be considered. After all, what value will
2 these lands have after they have been exploited--guttled?

3 In closing, I would like to quote from Mr. M. Hubbard King
4 of the Department of the Interior, and one of the world's most foremost
5 petroleum geologists, who had this to say on the development of oil shale.

6 "I'd just as soon leave it alone. If you want to
7 imagine one hell of a mess, imagine mining that shale and
8 discharging the salt wastes into the Colorado River. I
9 guarantee you'd kill the river."

10 For myself, I wish I could be hopeful, could be hopeful that
11 these hearings will have a true impact on the final outcome of this
12 project. I wish that the public could have input into these hearings
13 and be accorded the decision-making right that is given to any of our
14 private landlords. This is not the feeling I am not left with. Rather,
15 I am left with the distinct impression that the Department of the
16 Interior has been ordered to deliver the goods and that we here, at
17 these hearings are just a whistle stop on the route to an already foregone
18 political conclusion. Thank you.

19 MR. DAY: Anything further?

20 (no response)

21 MR. DAY: If there are no further witnesses, the public hearing
22 will be recessed until 9:30 tomorrow morning at Cheyenne, Wyoming.
23 Whereupon,

24 At 10:40 a.m., the hearing in the above-entitled matter was
25 recessed.

CERTIFICATE

The original Court Reporter assigned to this hearing by a commercial reporting service was taken ill and unable to type up her notes, which were in some disarray. A reconstruction of the hearing was undertaken by James Burski and Paula Lowery, who do now certify and attest as follows:

We, the undersigned, James Burski, Legal Clerk, and Paula Lowery, Reporter, do hereby certify that the foregoing is, to the best of our skill and ability, a true and accurate transcript of all the testimony adduced and proceedings had in the hearing in the matter of the Draft Environmental Impact Statement for the Proposed Prototype Oil Shale Leasing Program, held in Denver, Colorado, on October 10 and 11, 1972.

Done in Arlington, Virginia, December 1, 1972.


James Burski


Paula Lowery

1 UNITED STATES OF AMERICA
2 DEPARTMENT OF THE INTERIOR
3

4 - - - - -x
5 In the Matter of: :

6 DRAFT ENVIRONMENTAL STATEMENT :
7 FOR THE PROTOTYPE OIL SHALE :
8 LEASING PROGRAM. :
9 - - - - -x

REPORTER'S TRANSCRIPT

Robbers Roost Room
Outlaw Inn Motel
1630 Elk Street
Rock Springs, Wyoming
Tuesday, October 10, 1972

12
13 PURSUANT TO NOTICE, the above-entitled matter came on
14 for hearing at the hour of 9:30 o'clock a.m., this date,
15 before DENT D. DALBY, Administrative Law Judge.

16 PANEL MEMBERS:

17 HENRY ASH, Oil Shale Field Coordinator, Oil Shale Task
18 Force, Bureau of Land Management, Denver, Colorado.

19 STEVE UTTER, Bureau of Mines, Denver, Colorado.

20 HAROLD BOEKER, Bureau of Sport Fisheries and Wildlife,
21 Albuquerque, New Mexico.

22 JOHN DONNELL, U. S. Geological Survey, Denver, Colorado.
23
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I N D E X

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NAME:

PAGE NO.

Congressman Teno Roncalio

4

Bruce Marker (Environmental Specialist)

10

Marion E. Loomis

P R O C E E D I N G S

JUDGE DALBY: This hearing will come to order. My name is Dent D. Dalby. I am with the Office of Hearings and Appeals of the Department of the Interior.

The other members of the panel are Henry Ash, Oil Shale Deputy Coordinator in the Field; Steve Utter of the Bureau of Mines; Harold Boeker, Bureau of Sport Fisheries and Wildlife; John Donnell of the Geological Survey. And that covers the panel. We also have with us Jack Reed of the Bureau of Land Management at the table.

The purpose of this hearing is to receive comments on the Draft of the Environmental Statement of the proposed Prototype Oil Shale Leasing Program, pursuant to Section 102 (2)(c) of the National Environment Policy Act of 1969. In accordance with the provisions of the National Environment Policy Act the Draft Environmental Statement has been made available to the Council of Environmental Quality, and a notice of availability published in the Federal Register of September 7, 1972.

The Office of Hearings and Appeals published a notice of public hearing on the Draft Environmental Statement in the Federal Register of March 7, 1972, scheduling this hearing for today, beginning at 9:30 a.m. Interested parties wishing to appear were advised to contact Director James M. Day, Office of Hearings and Appeals, United States Department

1 of Interior, 4015 Wilson Boulevard, Arlington, Virginia.

2 The official Reporter will make a verbatim transcript
3 of the hearing. All matter that is spoken while the hearing
4 is in session will be recorded, and copies of the transcript
5 can be purchased from the Reporter.

6 Written comments from those unable to attend and
7 from those wishing to supplement their oral presentation at
8 the hearing should be received by the Director, Office of
9 Hearings and Appeals at the previously stated address on or
10 before October 23, 1972, for inclusion in the record.

11 If the witnesses have prepared a statement, it would
12 be -- we would appreciate furnishing the Reporter a copy for
13 her use in making the transcript.

14 Now, the first witness I have here listed is
15 Congressman Teno Roncalio. And if you will come forward to
16 the table, Congressmen, and give us your statement, we would
17 appreciate that.

18 CONGRESSMAN RONCALIO: Thank you very much, Chairman
19 Dalby, members of the hearing. I do not have a prepared
20 statement, and the reason is probably symbolical. I'm not
21 too sure where we've been and where we're going in oil shale.
22 And I'm not sure I could have prepared a statement adding
23 anything of value, either to the expertise that your agency
24 has accumulated over the years, or to the experience that
25 private industry have picked up in the shale research.

I'm here first to commend you for having the

1 respect for the opinions of the public that we all serve to
2 at least hold a hearing in the field and give the people a
3 chance to be heard. I think this augers well in all energy
4 matters, and wish it could have been done with nuclear
5 stimulation and with other new advanced techniques needed to
6 help solve our energy problems in the country today.

7 I recall the appropriations in my young life as a
8 staff assistant for the late Senator Joseph C. O'Mahoney of
9 Wyoming for research of oil shale processes, for extracting
10 the oil from the shale, going back 37 years ago, and funds
11 being used at the University of Wyoming Natural Resources
12 Research Institute. I recall how proud the Senator was. He
13 was in many ways my mentor and my political father. He was
14 proud of the research that this government put into Rifle,
15 Colorado, beginning 30 years ago, I think. Certainly a great
16 many years ago.

17 And there was much disappointment in this man of
18 vision when those processes failed to bring about a way that
19 shale could have taken place earlier than now. He envisioned
20 this sort of thing. He was a man of vision. He pioneered
21 with members of the Department of Interior the Trona Develop-
22 ment that is now an industry without which some five or six
23 thousand men would not have jobs in this state.

24 This was a field close to him and close to his
25 research.

1 I come more here in memory of him, and I pay tribute
2 to you gentlemen for holding the public meeting.

3 Environmental protection of the people was not on
4 the books many years ago when the coal began to be strip
5 mined in Wyoming. Yesterday, at Hanna, Wyoming, I was shown
6 the remnants of mining by wild, free entrepreneurs of Wyoming,
7 37 years ago. The first strip mines are ugly, rapacious --
8 a disgrace to the service of Wyoming. They were committed
9 by leading Laramie, Wyoming, businessmen. We all ought to be
10 ashamed that either businessmen or politicians or public
11 servants would allow conditions like that to continue. Not
12 even the gophers enjoy it, let alone the antelope which are
13 plentiful at this time of year or agriculture or mining, or
14 anything else.

15 Hanna today, thanks to the United States Bureau of
16 Land Management of the Department of Interior, have leased
17 those miners and required them to reclaim; and the comparison
18 between the mining in Wyoming today on BLM land and on free
19 land or state sections is glaringly obvious. And I commend
20 it to all interested in mining and in our work today to make
21 that comparison today at Hanna. It has been beneficial to
22 the industry; it would be beneficial to the government officials
23 and of great value to members of Congress, no matter who is
24 elected or who is defeated in the final drafting of statutory
25 legislation for strip mining control. That problem is not

1 separate from your inquiries today in its place in solving
2 the energy problems of this country.

3 I have glanced through Part II and Part III of the
4 report. I lost Part I. I don't know where it is. I hope you
5 gentlemen can appreciate that I've got other things on my
6 mind in Wyoming the next three weeks, and I'm busy at that
7 which I feel is the people's business.

8 I come to you from the 92nd Congress where I have
9 been on the job for better than 95% of all the quorum calls,
10 vote calls, and the fifth ranking member in attendance for
11 the Committee in the past two years. This week I'm neglecting
12 Washington to come home and see somebody. For that matter,
13 I no sooner entered this hearing today than two people said
14 to me, "Why can't you come back and see some of your old
15 friends? You are in trouble in your own state."

16 I'm here attending to that as well as hoping those
17 interested citizens in this part of Wyoming will make their
18 wishes heard.

19 I am aware that Wyoming will probably rank the least
20 of the states in the potential of the recoverable millions
21 of barrels of oil compared to the basins of Northwestern
22 Colorado and of Northeastern Utah. That production to be
23 done here will be done by in situ recovery methods, many of
24 which have had nothing new added to them in the past decade
25 or two.

1 I hope that if the experimentation continues that
2 citizens will want to know what's going on will make it their
3 duty to appear before you now and get on record to see what
4 is going on and not wait until good minds of good faith and
5 technicians have decided to proceed on these selected lease
6 sites with experimental methods to then complain about
7 damage to the environment and degradation to the atmosphere.

8 I repeat now that I have never had categorical
9 opposition to any research programs in Wyoming. I have
10 resented the secrecy with which some of them -- upon which
11 some of them were embarked. Failure to disclose to the public
12 what was going on.

13 I believe the royalties figures in contract now
14 with the pilots companies is woefully inadequate. In the best
15 public interest. 12 cents per ton for each 30 gallons of oil
16 recovered is a disgrace. And I encourage this panel and all
17 who hear my words to raise that now lest you will be foreclosed
18 forever from doing what is fair and just in the tax policy
19 of this country today.

20 Citizens private property can no longer absorb the
21 tax for running our government and our various political
22 subdivisions. Serrano versus Priest, California Supreme
23 Court in 1971, has now been followed by at least five additional
24 state supreme courts, ruling that private property -- ruling
25 that it is unconstitutional to tax private property to support

1 public schools; that this violates the fair and equal clauses
2 of the 14th Amendment because disparities in school districts
3 under tax evaluations.

4 Where else can we look for the money to run the
5 government if the people's property -- and this shale is the
6 people's property, gentlemen -- doesn't get a fair tax upon
7 those that will profit from its removal. I submit now that
8 an increase in that royalty will hurt no one because no one
9 is there to pay until they do produce. Once they recover,
10 you can trust upon the ingenuity people involved to see that
11 the royalty increase will be paid and taken care of in a
12 good, fair scale of profit.

13 I think it is almost criminal to allow royalty
14 rates to continue to the horrendous wealth and potential
15 in the shale for helping to solve our energy problems and
16 country today.

17 Gentlemen, Mr. Dalby, this concludes my testimony.
18 I wish you a successful hearing, and I hope that the -- that
19 if your conclusions are that not enough citizens' response
20 to your hearings this set of them indicates that there has
21 been a sufficient time of notice or opportunity for all to
22 be heard, I hope that you will consider additional hearings
23 with sufficient lead time so that no segment of our economy,
24 no segment of our business, professional people, industrial
25 people, sports and wildlife conservation people can claim

1 that they did not have an opportunity to come and be heard
2 upon the results of those three documents upon the hearing
3 table this morning. Thank you very much.

4 JUDGE DALBY: Thank you, Congressman Roncalio. We
5 appreciate your taking your time to give us your views upon
6 the subject.

7 CONGRESSMAN RONCALIO: I'll be happy to answer any
8 questions.

9 JUDGE DALBY: Are there any questions?

10 (No response.)

11 JUDGE DALBY: Apparently not.

12 CONGRESSMAN RONCALIO: Thank you very much.

13 JUDGE DALBY: I understand there was a representative
14 of the Wyoming Game and Fish Commission who was going to
15 testify. Would you come forward, please, to the table? Will
16 you give us your name and your title?

17 MR. MARKER: Yes. I'm Bruce Marker, and I'm here
18 in the capacity of Environmental Specialist for the Game and
19 Fish Commission of the State of Wyoming.

20 I'd like to have it known that this statement that
21 I'm about to give has not been reviewed by the entire Commission,
22 because, again, of what Mr. Roncalio pointed out, a lack of
23 time in preparing for this.

24 However, I have reviewed the Impact Statement that
25 has been sent out, and I'm going to base my statement essentially
on what is covered and what is not covered in the Impact Statement.

1 My official capacity with the Department is to
2 coordinate and review -- review information on impacts as
3 far as fish and wildlife is concerned, inform our Commission
4 and our director as to what it's going to be so they can
5 furnish information to the public which the public can use
6 to make the decision required. So I'm making this statement
7 in the interest of contributing to this process of effective
8 public decision-making relative to the proposed oil shale
9 leasing program in the State of Wyoming. I understand that
10 is the purpose of this meeting.

11 The Wyoming Game and Fish Department offers the
12 following comments upon review of the Impact Statement. For
13 more clear understanding of the Statement or the statement
14 that I'm about to give, I'd like to offer this.

15 In the official capacity of our Department we are
16 charged with administering the mandates and policies of the
17 people of the State of Wyoming with respect to wildlife, as
18 stated by law and prescribed by our Commission.

19 In Section 23-2 of the Game and Fish law of the
20 State of Wyoming, which was revised February 1, 1972, it is
21 declared that all wildlife in Wyoming as defined in Section 2
22 hereof is hereby declared the property of the State of Wyoming.
23 It is the purpose of this Act and the policy of the State of
24 Wyoming to provide an adequate and flexible system for control,
25 propagation and regulation of all such wildlife. In Section

1 23-1, Wyoming Game and Fish law, there's a definition of
2 wildlife. It says, "The word wildlife shall be contrued as
3 meaning all wild animals, and birds and fishes within the
4 State of Wyoming."

5 In Section 23-16 it is stated, "The Commission
6 shall authorize and collect, classify and disseminate such
7 statistics, data, and information as in its discretion will
8 tend to promote the objects and purposes of this Act. The
9 Commission may make such allowances from the Wyoming Game
10 and Fish fund and my utilize state agencies insofar as it
11 may be expedient to carry out the directions of this Section,"
12 or this Act.

13 We've been accused time and again by other agencies
14 or public interests of not taking a stand on a number of --
15 any number of things that will have an impact on wildlife.
16 And I think that a lot of times this can be attributed to the
17 definition of two words that I'd like to offer here out of
18 context. One of them is coherent and incoherent. It seems
19 that quite often people define coherent as when someone says
20 you want to hear. And opposed, that is incoherent. So if
21 they say something you don't want to hear, that word fits it.

22 Now, the purpose of this statement -- what I'm going
23 to offer right now, and possibly you may want to stop me
24 because it's written here -- the purpose of this statement,
25 it's to disseminate information as will, within the discretion

1 of the Commission, promote the objects and purpose of providing
2 for the continuing systems or control, propagation, management
3 and regulations of wildlife within the public decision-making
4 process.

5 As I see it, we, as professional wildlife managers,
6 are charged to providing a factual accounting of the impact
7 of various alternatives to the proposed project. And you,
8 as members of the public, are to make the decisions as to the
9 selection of alternatives through your selected delegations.
10 I know we have some representatives of the public, but the
11 public is the one who is going to ultimately make the decision
12 as to whether or not this project goes. If it does, what
13 controls will have to be put on it. They will do it eventually
14 through their elected delegation.

15 I offer the following accounting after having reviewed
16 this Impact Statement, with the feeling that it will render
17 this statement and impact accounting of the project more
18 complete, accurate, and factual. I'm going to start by getting
19 right into the record. On Page I-52 -- which is in the first
20 document -- it is stated that the re-establishment of the
21 fuller range of native browse and cover species may be difficult
22 and time-consuming. It is our hope that this difficulty will
23 not be a deterrent to a continued effort in this direction.
24 A commitment would seem to be in order at this point in the
25 statement that would point -- that would state right in the

1 statement that the time element in developing lease W-a and
2 W-b -- which are the two proposed leases in Wyoming -- the
3 time element in developing these leases is such that re-estab-
4 lishment of native browse and cover species can be accomplished
5 and will be required within the permit issued to the companies
6 concerned.

7 On Page I-74 and -75 it states that Colorado has
8 requested interest on Federal, State and local levels to
9 outline a broad course of additional studies for four important
10 areas of environmental concern, committing three-quarters of
11 a million dollars in two years to this study and perhaps the
12 finding of their study would be applicable to the Wyoming
13 proposal, or perhaps the State of Wyoming should center into
14 a similar program through the existing Environmental Planning
15 Committee, which I know has been set up for the purpose of
16 studying the impact of this program.

17 On Page II-23 I'd like to suggest that where it
18 says, "or use by Wildlife and Domestic Livestock, or for
19 domestic purposes," -- this be added at the end of Paragraph
20 II, what I've just quoted here, "or use by Wildlife or
21 Domestic Livestock purposes," be added at the end of Paragraph
22 II. This is where it's discussing the effect on the available
23 water supply in the area.

24 It is stated that -- on Page II-29 -- lists of
25 streams which support high-quality trout in the area is

1 provided -- in fact, this is provided in the appendix, and
2 it is indicated that they have omitted those stretches of
3 streams that are already destined to be impacted by committed
4 projects, or where permits have already been issued that will
5 have an impact on the streams. And it is essentially said
6 in here that these are omitted from the list of streams that
7 are in the area but are prime trout waters or fishery areas.
8 I would like to suggest that these streams and the total
9 mileage of them that are being impacted be included. The
10 purpose would be to have the eventual tabulation of the total
11 cumulative impact of development on the fish and wildlife
12 resources.

13 On Page II-40 it was suggested that Section (f) be
14 added. If you haven't read it, they have gone through (e).
15 I would suggest a Section (f) to state, "utilization and
16 enjoyment of open space." should be listed here to the
17 recreational resources. This would be effective, and this
18 would be effective to the degree -- to a great degree by the
19 proposed development. This is something I think not only
20 recreation lists and wildlife people but also sociologists
21 are starting to recognize the value of open space. I think
22 it is time we started counting on the impact statements on
23 proposed developments.

24 Page II-152 -- all I can say about this is that
25 there needs to be some additional input from the Game and

1 Fish people to account for the small game populations of the
2 people. I have some statistics here. In our final write-up
3 of this to meet with your requirements, to have our supplemental
4 statement in by the 23rd of October, we will include this.

5 Here's something -- I don't know how many people
6 noted it or not, but on Page II-159 I noted that within
7 somebody's authority or somebody's prerogative, they have
8 moved the county seat of Sweetwater County to Rock Springs.
9 I'm sure the Rock Springs people are happy, but I wonder
10 what the people in Green River feel like.

11 Page III-21, I think this is a proper place to
12 account for the cumulative impact, including that of related
13 developments of public resources to where we can have an idea
14 of what all of these figures are leading to. And I think
15 this is being pointed out in our state government at this
16 time in that our Governor has indicated in his public addresses
17 lately that he is going to commit the legislative body to
18 passing some sort of environmental act. I think this is
19 some place that we should establish certain people's responsibility
20 for tabulating a total overall impact of future development in
21 Wyoming along with passed developments. Page III-29, Section
22 B, under hunting and angling pressure. This section should
23 be rewritten and structured by individual state projects.
24 You have one statement that covers all of them. I don't
25 believe it does it adequately. I think it has to be applied

1 to each area individually. Pertinent facts which have to be
2 considered in doing this are, one, jurisdiction and management
3 of wildlife, in putting hunting regulations by individual
4 states. Number two, the same reference quoted in the Impact
5 Statement, which is river basin study -- Type 1 River Basin
6 Study, where the information has been accumulated by the
7 Bureau of Sport Fisheries and Wildlife. It is stated by the
8 year 2000, the quota shows a demand -- they indicate in there
9 through their reasoning that by the year 2000 the demand
10 for hunting and fishing in the total area concerned will not
11 have reached the capacity for the area. This is taken
12 directly from the report.

13 However, in developing these portions individually
14 by states, the same report shows that by the year 2000 the
15 demand or projected demand for the state of Wyoming would be
16 178-thousand man days as opposed to a habitat capacity of
17 172-thousand man days. This leaves a deficiency of six
18 thousand man days in the year 2000 in the State of Wyoming.
19 This does not at the same time account in the report for the
20 loss of habitat within the area due to the development this
21 will have on the impact on the total capacity on this area
22 for use of hunting and fishing.

23 Number three, current and considered management
24 practices along with relative hunter success, must also enter
25 into any evaluation of comparisons and the terminations of

1 impact. Number two above, which I just quoted, would in
2 itself render the subsequent reasoning in this section as
3 inaccurate.

4 Therefore, I submit that these should be accounted
5 for individually by states or by leases. By states, appropriately.

6 On Page III-83, Table III-16 showing impact of
7 increased population incline rates indicates a need for added
8 enforcement of Game and Fish law and increase personnel to
9 accomplish this requirement. This is not stated in there.
10 It just indicates that they indicate there would be an increase
11 in crime rate. Therefore, we can assume that there's going to
12 be a need for increase in enforcement of Game and Fish law.
13 It will take increase in personnel to accomplish this requirement.
14 To determine the cost of this increase to the Department, it
15 would necessitate determination of the percentage of population --
16 resident population and non-resident population. Under the
17 present management programs, the increase in pressure on big
18 game would only be in the resident hunters. This is under the
19 current management program. Because we're already issuing a
20 limited number -- we're limiting the number of non-resident
21 permits. There's no way, therefore, that we could increase
22 the number of permits issued to non-residents. Any increase
23 in permanents would come from a resident population. As you
24 know -- all of you who live here -- we have a considerably
25 lesser fee for residents than we do for non-residents. And

whether or not the revenue that the increase in the number of permits issued to residents would be sufficient to cover the increased costs for administration and management of the resource, we don't know as yet because we don't know what the increase would be. We can assume that there is going to be a cost in addition to what the revenue would bring in. However, we do have recodification of the laws for the legislature coming up, and part of the proposal in there is an increase in resident as well as non-resident fees. Perhaps this can take care of it. Again, it will depend on what the total impact will be.

Volume III on Page II-78 and -79, under E, wildlife population densities, as well as current and potential use should be accounted for in the Section. Rare and endangered species should be accounted for separately. They are not adequately accounted for. Where it states on this same page, "No angling habitat exists on the tract," I think to make this more correct the word "angling" should be changed to the word "fisheries."

On Page II-82 under H, Aesthetics, again this would be an appropriate place to account for the value of open space. Open space should be given a positive value with the resulting impact of the proposed project being accounted for. This would be an appropriate place to do that.

On Page V-1, more detailed commitment to mitigation

1 for unavoidable adverse impact should be accounted for on
2 individual tracts. We're speaking here of the mitigation
3 for the wildlife resource. There are two places in the volumes
4 which each refers to the other, indicating a detailed accounting
5 of proposed mitigation. And if you refer back and forth, you
6 can't find it in either one-- at least I couldn't.

7 Page IV-45, a table should be included here. It
8 would seem appropriate to include a table here to show the
9 impact of the two leases in Wyoming on the wildlife resource.

10 Page V-56, Section 4(A). Provision should be made
11 for approval of legally responsible agency. In this case,
12 the law of Wyoming gives the responsibility for fish and
13 wildlife management to the Game and Fish Commission. In this
14 state, in the Draft -- Impact portion of the Draft -- Impact
15 Statement, approval for any regulation or accountability for
16 wildlife is designated to the mining superintendent, and I
17 don't know that whoever he is would want this authority. And
18 if he did have it, I don't know if he would be qualified to
19 carry it out because we do have a legally designated agency
20 and authority in the State to account for this.

21 Page V-57, Section C, this Section should again be
22 rewritten to provide for all wildlife, not just game species.

23 Page V-48, under Section (A), I think it would be
24 appropriate to add a part (J) to Section (I). And in this
25 they could account for general stipulations -- or provide

1 stipulations to provide for mitigations of unavoidable
2 adverse impacts on wildlife resources.

3 I thank you for this opportunity to comment on
4 the Draft Statement.

5 JUDGE DALBY: We thank you for being present.

6 MR. BOEKER: Is it correct to assume that this
7 analysis will be presented as your Commission's formal analysis --

8 MR. MARKER: Yes.

9 MR. BOEKER: -- of the Statement?

10 MR. MARKER: This will be submitted to the Commission
11 for approval, and I have no reason to suspect that they won't
12 approve it, but this is within their authority, to approve
13 or disapprove this. And in the event that they do, it will
14 be forwarded by your deadline date under the signature of
15 your Director or the President of the Commission, whoever
16 they elect to authorize this.

17 But the purpose of presenting it here was to assist
18 in providing information to the public.

19 JUDGE DALBY: Any other questions?

20 (No response.)

21 JUDGE DALBY: Thank you. Are there any other
22 witnesses present or people who wish to testify? Come forward;
23 will you state your name and affiliation?

24 MR. LOOMIS: My name is Marion E. Loomis, Mineral
25 Development Geologist, Wyoming Department of Economic Planning

1 and Development.

2 Our agency is preparing a detailed written statement
3 on the Draft Environmental Statement for the proposed prototype
4 oil shale leasing program which will be submitted to the U. S.
5 Department of Interior by October 23, 1972.

6 The Department of Economic Planning and Development
7 is concerned with the overall impact of any general development
8 in the State of Wyoming. A development of the scale of the
9 proposed prototype oil shale leasing program will bring about
10 substantial changes in the area of development and will affect
11 the rest of the state to some extent.

12 We feel that the oil shale leasing program, as
13 described in the Draft Environmental Statement, will provide
14 our agency and other state agencies an opportunity to work
15 with private industry, local citizens, and the Department of
16 Interior to bring about an orderly development of any oil
17 shale program that may result from the prototype leasing
18 program.

19 The overall affects of the development of a
20 50-thousand-barrel per day shale oil industry in Wyoming are
21 to some extent unknown. Certain basic conditions are known,
22 such as the need for access roads, water supply and utilities.
23 Other items, such as the total amount of land disturbed, will
24 not be known until the type of mining and processing have
25 been determined.

1 A typical problem in the Washakie Basin is water
2 supply. If the development of oil shale were to damage the
3 limited water supply, the use of the area for stock and wildlife
4 would be seriously restricted. If the oil shale industry
5 were to develop additional water supply, the use of this area
6 for stock and wildlife could be enhanced.

7 The only means of realistically evaluating the impact
8 of the development of an oil shale industry in the Wyoming
9 Washakie Basin is to proceed with the program as proposed in
10 the Draft Environmental Statement. This would provide an
11 opportunity to study the real problems and the real benefits
12 of such a development.

13 I also have a statement from Doctor Miller of the
14 Wyoming Geological Survey, State Geologist.

15 "Having participated in the original planning for
16 a prototype oil shale leasing program in Wyoming, and having
17 reviewed Volumes I through III of the Department of Interior's
18 Draft Environmental Statement on the same subject, it is
19 evident that Interior should proceed to prepare Final Environ-
20 mental Statement in order that an oil shale leasing program
21 can be established as soon as possible."

22 Thank you.

23 JUDGE DALBY: Any other statements?

24 MR. PATTON: Senator Hansen has asked that I extend
25 his apologies for being unable to attend. He would testify

1 before the hearing on October 12 in Cheyenne and would have
2 a written statement.

3 JUDGE DALBY: Would you give us your name?

4 MR. PATTON: My name is Patton.

5 JUDGE DALBY: Would you come forward and give us
6 your name and affiliation?

7 REPRESENTATIVE MAJHANOVICH: I'm Steve Majhanovich,
8 Sweetwater County.

9 Any environmental impact statement, of course,
10 should be concerned with the long-range or short-range affects
11 of the energy crisis that is impending in the United States
12 today. With five percent of the world's population, we're
13 a consuming 40 percent of its resources. The oil shale
14 development certainly should be part of the coordinated effort
15 by the Federal Government, by your state governments in
16 conjunction with nuclear stimulation, synthetic natural gas,
17 liquified gas, and other hydrocarbon resources.

18 When we think of an environmental impact, particularly
19 in the impact of oil shale, we must consider the energy needs
20 of the United States and, of course, on a local basis the
21 energy needs of Wyoming.

22 I will point out to you that within the past two
23 or three years there have been an industrial uproar because
24 of the lack or shortage of natural gas in Southwestern Wyoming
25 for industrial use. At a recent meeting in Casper, Wyoming,

1 of the Rock Mountain Oil and Gas Association, some dealers
2 were actually complaining about a shortage of diesel oil in
3 the State of Wyoming. People from the Denver, Colorado,
4 region experienced three days of a gasoline shortage over the
5 Labor Day weekend.

6 When you consider the environment -- the impact
7 of the program on the environment, you must also consider the
8 potential energy needs of the United States and the State of
9 Wyoming. So I'm going to direct just a general statement on
10 the impending shortage of natural hydrocarbons in the United
11 States.

12 I feel that immediate development of our shale oil
13 resources should commence. Development should be of a
14 short-range nature because of the adverse affects of waste
15 shale removal if this retorting is used.

16 Development of oil shale should be a second priority.
17 Some environmental safeguards may have to be dropped in view
18 of the potential energy crisis in the United States, but I
19 believe that those problems can be taken care of if the
20 project extends beyond the point where a more careful allocation
21 and use of our limited resources have been made.

22 In other words, until such time as breeder reactors,
23 solar energy, direct conversion of coal into hydrocarbons,
24 or other energy sources are developed, development of oil
25 shale should be an immediate number one priority on a short-term

1 basis.

2 A long-range plan of development may, in my opinion,
3 extend more energy to develop, produce and dispose of the
4 spent shale, than the actual energy released.

5 Although I hesitate in a free enterprise system to
6 dictate where the end products should be used, it is becoming
7 more apparent that the wasteful practices of preceding generations
8 and this generation are responsible for the energy crisis we
9 are now approaching, and the continuous wasteful demand for
10 new energy cannot but assist in the gradual decay of our
11 environment.

12 Development of oil shale should be part of a
13 national policy on all fuels. I believe we can have our cake
14 and it it, insofar as the environment is concerned, in a
15 well-conceived, sound coordinated policy of total energy
16 resources today.

17 Thank you.

18 JUDGE DALBY: Thank you. Any questions?

19 (No response.)

20 JUDGE DALBY: We thank you, Mr. Majhanovich, very
21 much.

22 Are there any other people who wish to testify?

23 (No response.)

24 JUDGE DALBY: Apparently not. And I want to say,
25 the Director of the Office of Hearings and Appeals has asked

1 me to express his personal thanks for your attendance and the
2 time and effort. The comments will be of value to the
3 Department and all of the comments will be carefully considered
4 in accordance with the applicable provisions of the National
5 Environmental Policy Act of 1969.

6 And if there is nothing further, I think we can
7 adjourn. Thank you very much.

8 (Whereupon, at 10:30 o'clock a.m., the hearing in
9 the above-entitled matter was adjourned.)

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the Department of the Interior in the matter of: DRAFT ENVIRONMENTAL STATEMENT FOR THE PROTOTYPE OIL SHALE LEASING PROGRAM, at Rock Springs, Wyoming, Tuesday, October 10, 1972, was held as herein appears, and that this is the original transcript thereof for the file of the Department.



Jean L. Hohnstein
Official Reporter

1 UNITED STATES

2 DEPARTMENT OF THE INTERIOR

3 - - - - - X
4 In the Matter of: :
5 COMMENTS ON THE DRAFT :
6 ENVIRONMENTAL STATEMENT :
7 FOR THE PROPOSED PROTOTYPE :
8 OIL SHALE LEASING PROGRAM :
9 - - - - - X

American Room
Little America Motel
West Lincoln Way
Cheyenne, Wyoming

11 The above-entitled matter came on for hearing at 9:30
12 a.m., Thursday, October 12, 1972,

13 BEFORE:

14 JAMES M. DAY, Director, Office of Hearings
15 and Appeals, U. S. Department
16 of the Interior, Washington,
D. C.

17 PANEL MEMBERS:

18 REID STONE, Oil Shale Coordinator;
19 ANDREW DeCORA, Bureau of Mines;
20 ALBERT LEONARD, Bureau of Land Management;
21 KEN ROBERTS, Bureau of Sport Fisheries and
22 Wildlife.
23
24
25

I N D E XWITNESSES:PAGE NUMBER

Governor Stanley K. Hathaway

7

William J. Thompson

11

V. Dean Allred

17

John Hand

20

P R O C E E D I N G S

MR. DAY: This hearing will come to order. My name is James M. Day and I am Director of the Office of Hearings and Appeals, United States Department of the Interior.

Sitting on the panel as representatives of the Department are Mr. Reid Stone, Oil Shale Coordinator; Mr. Andrew DeCora, Bureau of Mines, Albert Leonard, Bureau of Land Management; and Mr. Kenneth Roberts, Bureau of Sports Fisheries and Wildlife.

The purpose of this hearing is to receive comments on the Draft Environmental Statement for the Proposed Prototype Oil Shale Leasing Program, pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969.

In accordance with provisions of the National Environmental Policy Act, the draft environmental statement was made available to the Council on Environmental Quality on September 6, 1972, and a Notice of Availability published in the Federal Register on September 7, 1972. This document has been marked as Exhibit 1.

The Office of Hearings and Appeals published a Notice of Public Hearing on the draft environmental statement in the Federal Register on September 7, 1972, scheduling the hearing for today, beginning at 9:30 a.m. Interested parties wishing to appear were advised to contact Director, James M. Day, Office of Hearings and Appeals, U. S.

1 Department of the Interior, 4015 Wilson Boulevard,
2 Arlington, Virginia, 22203.

3 An official reporter will make a verbatim transcript
4 of the hearing. All matter that is spoken while the hearing
5 is in session will be recorded by the reporter. In order to
6 insure a complete and accurate record of the hearing, it is
7 absolutely necessary that only one person speak at one time.

8 While the hearing is in session, no one will be
9 recognized to speak other than the parties who wish to
10 present statements.

11 It should be understood that this is not an
12 adversary proceeding. The participants presenting their
13 views will not be sworn or placed under oath. There will be
14 no examination or interrogation of any of the participants.
15 However, the panel may ask witnesses questions in order to
16 clarify matters brought out in the testimony.

17 The participants will be called in the order shown
18 on the list available at the press table.

19 Although there will be no strict procedural rules,
20 I would like to stress two important points. The first is
21 that the presentations should be relevant and supported by
22 pertinent data. If any comment is directed to the draft
23 environmental statement, please refer to the applicable
24 pages of that statement, and if information is quoted from
25 technical or scientific journals or other publications,

1 please give the name, author, page number and date of the
2 publication.

3 Participants may submit written statements at the
4 conclusion of their oral presentations. The statements will
5 be marked as exhibits. I do not, however, wish to receive
6 written statements as exhibits unless they contain material
7 that has not been covered in the oral presentation.

8 It will be quite helpful to the reporter if we
9 could obtain copies of any prepared statements. Accordingly,
10 the participants will be contacted as they approach the
11 speaker's table to see if copies of their presentation are
12 available. Any such statements will not, however, become a
13 part of the record unless a specific request is made and
14 unless it contains material that is not covered in the oral
15 presentation.

16 It will be quite helpful to the reporter if we could
17 obtain copies of any prepared statements. Accordingly, the
18 participants will be contacted as they approach the speaker's
19 table to see if copies of their presentation are available.
20 Any such statements will not, however, become a part of the
21 record unless a specific request is made and unless it
22 contains material that is not covered in the oral
23 presentation.

24 Oral statements at the hearing will be limited to a
25 period of 10 minutes. This limitation will be strictly

1 enforced. To the extent that time is available after
2 presentation of oral statements by those who have given
3 advance notice, I will give others present an opportunity to
4 be heard.

5 Written comments from those unable to attend, and
6 from those wishing to supplement their oral presentation at
7 the hearing, should be received by the Director, Office of
8 Hearings and Appeals, at the address previously stated, on or
9 before October 23, 1972, for inclusion in the record.

10 A transcript of this public hearing will be
11 prepared and the final environmental statement will reflect
12 the comments of this hearing where appropriate.

13 Copies of the transcript of this hearing can be
14 obtained by making arrangements with the official reporter.
15 Copies of all written statements can be obtained by making
16 appropriate arrangements with the Director, Office of
17 Hearings and Appeals.

18 The Secretary of the Interior, Rogers C. B. Morton,
19 has asked me to express his personal thanks for the time and
20 effort contributed by all of the participants in this
21 meeting. The comments and opinions received will be of
22 valuable assistance to the Department. All comments will be
23 carefully considered in accordance with applicable provisions
24 of the National Environmental Policy Act of 1969.

25 I now call on the Governor of the State of Wyoming,

1 Stanley K. Hathaway.

2 GOVERNOR HATHAWAY: Thank you, Mr. Chairman.
3 Members of the Hearing Board, first of all, let me welcome you
4 to the Capitol City of Wyoming. I understand you are going
5 to Rock Springs when you leave here. The only error I saw in
6 the Environmental Report was that Rock Springs was the
7 county seat of Sweet Water County. It happens to be Green
8 River. I am sure you will correct that when you get over
9 there.

10 The research and development of Wyoming's large
11 oil shale deposits has been a subject of major concern to the
12 State of Wyoming for many years.

13 In July, 1968, I appointed the Wyoming Oil Shale
14 Advisory Committee to examine the Department of Interior's
15 report "Prospects for Oil Shale Development--Colorado, Utah
16 and Wyoming" dated May, 1968.

17 The Wyoming Oil Shale Advisory Committee members
18 submitted their comments to me and I in turn submitted a
19 detailed statement to the Secretary of Interior.

20 Again, in May, 1970, at the request of the
21 Department of Interior, I formed the "Wyoming Oil Shale
22 Environmental Planning Committee." This committee examined
23 all available information on Wyoming oil shale and prepared
24 the report "Environmental and Economic Report on Wyoming Oil
25 Shale" which was submitted to the Secretary of Interior in

1 February, 1971.

2 I am pleased to see that the Department of Interior's
3 Proposed Prototype Oil Shale Leasing Program has incorporated
4 a number of the suggestions and recommendations of these two
5 Wyoming committees.

6 The Wyoming Oil Shale Environmental Planning
7 Committee is still an active committee and is ready and
8 willing to work with the federal government, private
9 industry and other interested groups in the orderly
10 development of an oil shale industry in Wyoming.

11 It is common knowledge that the United States has
12 a serious energy problem and in order to meet the energy
13 needs of this country all potential sources of energy must be
14 evaluated. The true nature of this energy shortage was
15 brought out recently by the critical short supply of gasoline
16 which occurred in the Denver, Colorado area over last Labor
17 Day weekend. As stated in the Draft Environmental Statement,
18 oil shale in Colorado, Utah and Wyoming has the potential
19 to supply one-million barrels of oil per day by 1985 or 10
20 percent of the projected domestic supply of the crude
21 petroleum at that time. Any source of supply that can
22 fulfill 10 percent of the annual domestic production by 1985
23 certainly must be developed.

24 There are many aspects of oil shale development
25 which are in question today. The best method of mining,

1 surface, underground, or in situ, the true environmental
2 problems, the socio-economic impacts, etc. Many studies and
3 projections have been made and recommendations range from
4 full-scale development to no development at all of these
5 rich oil shale deposits.

6 The Proposed Prototype Oil Shale Leasing Program
7 and subsequent development appear to offer a logical process
8 by which government, industry and interested citizen groups
9 can work together in the orderly development of a pilot
10 program in which all various aspects of oil shale
11 development can be examined and realistic solutions can be
12 developed.

13 In fact, the proposed oil shale leasing program
14 offers the United States and the States of Colorado, Utah and
15 Wyoming a unique opportunity to prove that we do have the
16 ability to develop a major source of energy without undue
17 damage to the environment of this area that we all dearly
18 love.

19 We need to develop and refine the technology
20 necessary to produce oil from our oil shale deposits in the
21 most economical manner. This cannot be done without issuing
22 developmental leases on a basis that private industry will
23 invest the necessary capital. At the same time I believe it
24 is impossible to evaluate all of the environmental
25 consequences of oil shale mining and production without

1 on-site projects which demonstrate the necessary guidelines
2 for environmental protection. Simply stated, we need to have
3 a developmental project in each of the three states of
4 Wyoming, Colorado and Utah to improve our technology and to
5 show in a practical way the environmental protection
6 measures that will be necessary prior to commercial
7 production. I believe that the time for commencing these
8 developmental projects is now.

9 As Governor of Wyoming, I appreciate the fact that
10 the Department of Interior held these hearings in Wyoming in
11 order to provide our people an opportunity to express their
12 opinion of this proposed program. Additional written
13 statements will be submitted to the United States Department
14 of Interior on the Draft Environmental Statement by the State
15 Department of Economic Planning and Development and the
16 Wyoming Oil Shale Environmental Planning Committee.

17 The State of Wyoming, incidentally, has about 260
18 acres of State land within the area of the Oil Shale
19 Deposits in Southeastern Wyoming. The Land Commission has
20 taken the position that we will develop a State leasing
21 policy in conjunction with the Federal Government as soon as
22 we know what the Federal Government's policy is going to be.
23 The oil shale projects in Wyoming are of a different nature
24 than those in the Peance Creek Basin. They are thinner, but
25 also perhaps more readily lined without the tremendous

1 over-burden. We think it is important today that there will
2 be a developmental project in each of these states because the
3 problems are different and we hope that the incentive will be
4 great enough to private industry to have a project in each of
5 the three states.

6 I believe that the Department has done a fine job
7 of evaluating the environmental consequences, but what do we
8 really know until we actually have a project on the ground,
9 until we can evaluate over a period of five or six years,
10 what happens when we start mining oil shale. We have talked
11 about this project in the last three administrations.
12 Wyoming has always taken the position that we should move
13 forward and we hope that we have now reached the point that
14 we are going to move forward and not continue to study and
15 talk about this problem for the next ten years, because the
16 energy shortage is so critical that these resources must be
17 developed. I believe they can be developed in a way that not
18 only benefits the National interest but protects the
19 environment of this great area. Thank you, very much,
20 gentlemen.

21 MR. DAY: Thank you, Governor. I now call on
22 Mr. William J. Thompson, representing Clifford P. Hansen,
23 United States Senator from Wyoming.

24 MR. THOMPSON: Mr. Chairman, first I would like to
25 state that Senator Hansen had hoped to be here personally

1 today but the closing and hectic final days of the Congress
2 kept him in Washington. However, when he first went to
3 Washington in 1967, he started developing oil shale
4 legislation which he introduced in 1968. His absence should,
5 in no way, reflect a disinterest in this matter. In fact, he
6 is delighted that at long last it appears that we are on the
7 verge of actually developing these resources.

8 Mr. Chairman, let me compliment you for holding
9 open hearings on the proposed oil shale leasing program in
10 Wyoming.

11 I know that many long and tedious hours and the
12 best efforts of those who are knowledgeable of the oil shale
13 program have gone into the preparation of the draft
14 environmental statement on the environmental costs and
15 problems of oil shale development.

16 The State of Wyoming under Governor Hathaway's
17 direction has also made a comprehensive study of the
18 environmental impact of oil shale development which, I am
19 sure, was used in the Department's study and statement.

20 The conclusion of the draft environmental
21 statement is encouraging both to those of us concerned with the
22 quality of the Wyoming environment and to those of us who also
23 must be concerned with the nation's energy needs.

24 There can certainly no longer be any doubt that the
25 nation does face an energy crisis. U. S. self-sufficiency in

1 oil and gas has already disappeared and we are importing more
2 than 25 percent of the oil we use and are using much more gas
3 than is being discovered each year. Oil and gas together
4 furnish three-fourths of our total energy needs and we are
5 pursuing a perilous course in a growing dependence on
6 imported oil and gas, most of which must come from the
7 Eastern Hemisphere Arab countries, not the most politically
8 stable are of the world.

9 The Department of the Interior is actively involved
10 in a White House study of the energy problem and possible
11 solutions. The Senate Interior Committee is in its second
12 year of a study on National fuels and energy policy which
13 included oil shale hearings. In the short term -- for the
14 next 15 years at least -- the U. S. must depend mainly on
15 petroleum hydrocarbons to meet the bulk of our escalating
16 energy needs.

17 We face a real threat to this country's status as a
18 world power resulting from increased dependence on foreign
19 oil. This problem, of course, will only be solved when our
20 nation is again in substantial control of its energy supply,
21 and this may not happen again until after 1985, at the
22 earliest. But there is much we can do, first to mitigate our
23 dependence on foreign oil in the short-term, and second to lay
24 the foundations now for a future viable energy position.

25 In the short term, we can take at least three steps:

1 We can begin construction of the trans-Alaska pipeline, which
2 the Secretary of the Interior has approved on the basis of
3 three years' exhaustive study. We can decontrol the wellhead
4 price of natural gas. We can intensify both offshore and
5 onshore drilling.

6 In the long term there are three other fuel
7 sources which must be developed and on which we must begin
8 taking action now. These are oil shale, coal and nuclear
9 power.

10 Coal is a major U. S. resource which could provide
11 us with ample energy supplies. But it failed to develop
12 significantly in the Sixties for several reasons including
13 over-optimistic nuclear forecasts, stringent safety
14 regulations, and sulfur restrictions. In 1972, air quality
15 standards are still effectively barring large volumes of
16 high-sulfur coal from the market, particularly from use in
17 power plants which have turned to residual fuel oil. In the
18 absence of economical stack gas control, it would therefore
19 seem important that we exercise caution in setting sulfur-
20 control standards. The expanded use of low-sulfur coal from
21 the Western states is particularly a possibility if we are
22 realistic about pollution levels.

23 Exploitation of coal reserves for conversion to
24 liquid or gasified fuels will, of course, require the creation
25 of a new large-scale industry, necessarily a long-term

1 proposition. The Department of the Interior has, in fact,
2 recently broken ground for a coal gasification pilot plant
3 in Pennsylvania, and others are being funded by the American
4 Gas Association and the Office of Coal Research.

5 But I believe development of an oil shale industry
6 that could contribute substantially to U. S. self-sufficiency
7 in energy by 1985 offers one of the best alternatives we have
8 at the least cost to degradation of the environment. There
9 are and will be problems including the water that will be
10 needed as the draft environmental statement points out. By
11 comparison, one large coal liquification plant would require
12 almost twice as much water.

13 Another problem would be increased salinity of the
14 Colorado River. We are not attempting to solve that problem
15 through Federal legislation in cooperation with the Colorado
16 River states.

17 I am impressed with the draft statement's
18 consideration of alternatives. And I certainly agree that
19 the environmental problems facing the alternatives are as
20 great or greater for other domestic sources as they are for
21 oil shale.

22 And I also agree with Assistant Interior Secretary
23 Hollis Dole, who, in my opinion, is one of the nation's most
24 knowledgeable men in energy matters.

25 Secretary Dole has testified before the Senate

1 Interior Committee that he believes it is now economical to
2 develop oil from oil shale providing the environmental
3 safeguards are met.

4 In oil shale we have a tremendous reserve of
5 energy -- far greater than any other known domestic source
6 except possibly coal -- and I believe it should be developed
7 to assure both economic and national security.

8 When the U. S. becomes substantially dependent on
9 imported oil along with a growing dependence on imported
10 liquified natural gas, already three times the price of
11 domestic gas, we will undoubtedly see a rapid rise in the
12 price of oil.

13 Oil from shale will probably be higher than the
14 present wellhead price of domestic crude oil but could very
15 well be the price regulator of imported oil.

16 I believe that development of a one million-barrel-a-
17 day shale oil industry by 1985 would come closer than any
18 other domestic alternative in solving America's near and
19 long-term energy problem without unduly degrading the
20 environment.

21 MR. DAY: Thank you, Mr. Thompson. We will next
22 call on V. Dean Allred, who will make a statement on behalf
23 of Marathon Oil Company.

24 MR. ALLRED: Mr. Chairman and members of the
25 panel, it is my pleasure this morning to present a statement

1 in behalf of G. R. Schoonmaker, Vice-President for
2 Exploration for the Marathon Oil Company.

3 This Program is being proposed in consonance with
4 the President's Clean Energy Message of June 4, 1971, wherein
5 he requested the initiation of "a leasing program to develop
6 our vast oil shale resources, provided that environmental
7 questions can be satisfactorily resolved."

8 The development of all domestic energy supplies is
9 needed to fulfill the following apparent national goals:

- 10 (1) Adequate energy for continued economic advancement.
11 (2) An acceptable level of reliance on foreign energy sources.

12 Those two objectives should be met with a rational
13 consideration among the factors of environment, economics,
14 and dependability of supplies for the consumer.

15 The National Petroleum Council in the interim
16 report of July, 1971, U. S. Energy Outlook: An Initial
17 Appraisal 1971-1985 points out that unless substantial
18 improvements occur in economic conditions and government
19 policies, this Nation will be dependent upon foreign sources
20 for 57 percent of its oil requirements by 1985. The bulk of
21 this foreign oil would have to come from the Middle East and
22 North Africa.

23 It is questionable whether this Nation is capable
24 of maintaining its economic and diplomatic initiative under
25 such a degree of energy dependence.

1 Given these considerations, we laud the proposed
2 Oil Shale Program which provides a reasonable approach to
3 test the viability of this energy source.

4 We must not lose sight of the fact that the
5 proposed Oil Shale Program is being undertaken to test the
6 following premises: (1) The economic and technical
7 feasibility of mining and conversion of the oil shale to a
8 useable synthetic liquid or gaseous hydrocarbon. (2) The
9 adequacy of the proposed bidding and leasing policy. (3) The
10 impact of the proposed mining and conversion systems on the
11 environment.

12 We would, particularly, like to comment on the last
13 item. It must be emphasized that this Program is a prototype,
14 in which a very small amount of land has been carefully
15 chosen in order to quantify certain unknown factors. The
16 entire rationale behind the proposals is to take these six
17 tracts, which are representative of various potential
18 recovery techniques, and test oil shale technology and
19 environmental effects. Therefore, the Interior Department has
20 reduced the amount of acreage to an absolute minimum and
21 dispersed that amount over the vast expanse of three states
22 in order to truly test the Program in a microcosm. This is
23 an example of long-range planning and a scientific approach
24 to a balanced solution for unlocking the oil shale resources.

25 We firmly believe that the operations under the

1 prescribed conditions on limited acreage are capable of being
2 conducted with minimal long-term effect on the environment.
3 Even more to the point, we feel that it would be a major error
4 to abort the potential development of this new and vital
5 industry by premature condemnation of a program designed to
6 develop and perfect technology and to ascertain the vital
7 environmental data. All this information will be important
8 in developing the vast oil shale resources so that they may
9 become part of the reserves and production so sorely needed
10 in helping to meet our Nation's energy requirements.

11 The lead time required in the shift of all forms of
12 energy from resource to reserve and production categories is
13 always great but it will be particularly long in oil shale
14 since new technology and methods must be developed. Any
15 commercial production resulting from the Prototype Oil Shale
16 Leasing Program is at least seven to ten years into the
17 future and therefore we urge that the sale be held at the
18 earliest possible date. It can be anticipated that
19 additional leasing of Federal oil shale lands will probably
20 await the results of these initial efforts; hence, the
21 deferral of the sale under this Program will postpone the
22 entrance of an oil shale industry into our energy supply
23 picture further into the future, a delay which definitely
24 will not be in the best interest of our Nation. Very truly
25 yours, G. R. Schoonmaker, Vice-President, Exploration.

1 MR. DAY: Thank you, Mr. Allred. We will now call
2 on a representative from Cameron Engineers, Denver, Colorado.

3 MR. HAND: Mr. Chairman, my name is John Hand. I
4 am Vice-President of Mintech Corporation. Our parent firm,
5 Cameron Engineers of Denver, of which I also am Vice-President,
6 has been a consultant to companies with oil shale interests
7 for nearly 20 years. Some of our people have experience in
8 oil shale dating back to the mid-1940's when the Bureau of
9 Mine's oil shale research facility near Rifle, Colorado was
10 opened.

11 Mintech Corporation has been actively engaged for
12 the past few years in exploring and studying the potentials
13 of oil shales in the Green River Basin of Wyoming for in
14 situ production possibilities. We are following closely
15 the work and cooperating wherever possible with the program
16 of the U. S. Bureau of Mines being carried on by the Laramie
17 Energy Research Center.

18 The research that the Bureau of Mines is doing at
19 Green River and north of Rock Springs, Wyoming with
20 conventional fracturing methods in the Wyoming oil shales has
21 shown considerable promise and we hope that this program can
22 be accelerated. The oil shales of Wyoming, although not as
23 geographically concentrated as in Colorado and Utah, appear
24 to be uniquely favorable in their characteristics for in
25 situ retorting methods.

1 The development of feasible methods for in situ
2 retorting is going to take time and money but the target is
3 very big and the work should be encouraged. We would hope
4 that in the event there is insufficient interest shown in
5 leasing sites which could only be developed by in situ
6 methods at this time, then the Department of the Interior
7 consider reoffering these or other sites which might be
8 nominated by industry when the state of technological
9 development is further advanced.

10 Now turning to the Draft Environmental Statement,
11 the Department of the Interior is to be commended for
12 compiling one of the most thorough impact statements ever
13 prepared. Not only has the Department predicted the
14 environmental impacts of the proposed prorotype leasing
15 program, which in itself is a relatively modest program, but
16 the Department has provided a glimpse of what could
17 conceivably be the end result of the current program at a
18 point several years into the future. In doing so, the impacts
19 caused by development on private lands, as well as on public
20 lands, have been considered.

21 That portion of the statement dealing with energy
22 alternatives is especially well done. The data presented
23 confirm the conclusions reached in numerous energy studies
24 conducted over the past several years by groups such as the
25 National Petroleum Council, the Interior Department and the

1 Office of Emergency Preparedness. The fact is well
2 documented that this nation is approaching an era of energy
3 shortage. The longevity of that era depends on the energy
4 policy decisions made today.

5 No single source can supply 100 percent of our
6 energy needs and for that reason, it is imperative that steps
7 be taken to develop alternative sources. In the interim,
8 heavy reliance must necessarily be placed on conventional
9 petroleum because of the several years of lead time required
10 to develop viable alternatives. Oil shale is but one fuel
11 that will become part of a broadened energy mix in the future,
12 a mix that will likely include liquid and gaseous fuels from
13 coal, and increased usage of nuclear fuels.

14 Reduction of energy consumption is discussed in the
15 statement as one alternative to shale oil production but the
16 social and economic consequences of this approach are
17 considered to be dangerous, if in fact a reduction in energy
18 consumption could be achieved. Whereas U. S. per capita
19 energy consumption might conceivably reach a plateau sometime
20 in the future, total energy consumption by this nation will
21 most assuredly increase.

22 Increased imports of petroleum from foreign sources
23 is called by many the only answer to our energy problems,
24 but the relative insecurity of supply from many countries
25 makes it undesirable to increase our dependence on these

1 sources. And the worldwide demand for petroleum is
2 increasing. Per capita consumption in developing countries
3 is rising even faster than in the United States.
4 International competition will grow even more intense in the
5 future further strengthening the position that we in the
6 U. S. should improve our energy self sufficiency. Shale oil
7 will be part of the solution.

8 Neither the Department of the Interior nor industry
9 is approaching oil shale development oblivious to concern
10 for the environment. As a matter of fact, the record shows
11 exactly the opposite. We recognize the unique opportunity
12 to create an industry that will include environmental
13 quality controls from the very beginning. No other American
14 industry has ever had that opportunity. Industry does not
15 intend to lose the opportunity nor do we intend to shirk the
16 responsibility that is incumbent with us to protect the
17 environment. Considerable sums of money have already been
18 spent for research aimed at providing solutions to
19 environmental problems, and much more will be spent before
20 the first barrel of shale oil enters a pipeline.

21 The prototype program is designed to not only
22 insure that environmental impacts will be minimized, but to
23 provide the means by which development can be stopped if
24 adequate pollution control cannot be achieved.

25 Let us trace the steps that will be taken to insure

1 that environmental impacts are controlled within acceptable
2 limits.

3 1. A company bidding on a tract must present with
4 its bid a preliminary plan describing the type of development
5 envisioned to be most suitable for the tract in question and
6 they must define the steps that would be taken before choosing
7 the ultimate development plan.

8 2. Each lease issued will contain stipulations
9 specifically tailored to individual tracts -- stipulations
10 defining what can and cannot be done on that tract and what
11 must be done to protect the environment. The stipulations
12 would be toughened in the future if the necessity for doing
13 so became obvious. The stipulations would supplement state
14 and Federal air and water quality standards. Development
15 would also be subject to Federal regulations dealing with
16 exploration, production, mining and reclamation of lands
17 administered by the Interior Department. Also to be made
18 part of a lease are specific stipulations for each tract to
19 control the use and reclamation of any off-tract lands used
20 for pipelines, roads, power lines, disposal sites, etc. Use
21 of these other lands must also conform to the Federal and
22 state standards and regulations mentioned earlier. In addition
23 any lease would include language designed to encourage timely
24 and orderly development of oil shale and to discourage
25 speculation.

1 3. After a lease is issued, a lessee is required
2 to initiate extensive monitoring programs to determine if
3 environmental protection measures are adequate or if changes
4 are required. Such monitoring would be required throughout
5 the life of the lease and would include surveillance of
6 wildlife and its habitat and air and water quality.

7 4. Within three years of a lease issuance, a
8 lessee would be required to submit a detailed plan of
9 development to the Interior Department. Only after public
10 hearings and consultation with state and local officials would
11 the plan be approved, and only then after necessary changes had
12 been made. If the plan, as submitted, were toally unacceptable
13 to Interior, it would be reworked. And it would continue to
14 be reworked until it was acceptable. Large scale development
15 would not occur until solid guarantees of environmental
16 protection were provided.

17 5. If the lands for which leases were issued during
18 this prototype program could not be developed in a manner
19 consistent with environmental integrity, no development
20 would occur and no further leases would be issued until
21 environmental protection could be assured.

22 Thus, the safeguards built into the program clearly
23 indicate that oil shale development will be done right or it
24 won't be done at all. If air and water quality cannot be
25 maintained within acceptable limits, there will be no

1 development. If land affected by mining or waste disposal
2 cannot be satisfactorially reclaimed, there will be no
3 development. If the companies obtaining leases don't
4 cooperate fully with local and state officials charged with
5 the responsibility of planning the municipal facilities
6 required, there will be no development. If adequate
7 provisions cannot be made for protecting fish and wildlife
8 and for protecting and/or restoring their habitats, there
9 will be no development.

10 And contrary to the historical belief that a man's
11 home is his castle, to do with as he wishes, companies
12 developing private lands will be obliged to adopt essentially
13 the same rigid standards that will legally be required of
14 development on public lands. We strongly endorse the
15 safeguards built into the leasing program and feel that the
16 stringent rules, regulations, and stipulations do not affect
17 industry's willingness to cooperate and participate.

18 Gentlemen, the need for shale oil has been amply
19 demonstrated not only by the draft environmental statement,
20 but by literally dozens of energy studies in the past
21 several years.

22 The draft statement is thorough in its
23 identification of impacts but most importantly, it describes
24 effective procedures by which those impacts would be
25 minimized. There is no doubt in our minds that oil shale

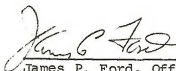
1 can be developed safely and efficiently by private industry.
2 But because of the time lag between conception of a plan and
3 actual commercial production of shale oil, it should not be
4 postponed any longer. To do so only invites a crash program
5 of development which could lead to far more serious
6 environmental impacts.

7 We urge you to proceed with the program as
8 defined in the draft statement.

9 MR. DAY: Thank you, Mr. Hand. This completes our
10 list of scheduled witnesses. Are there any others present
11 desiring to make a statement? Hearing no response on behalf
12 of the panel, I would like to thank the people of the State
13 of Wyoming for their warm hospitality and this hearing is
14 recessed until tomorrow morning at 9:30 in Salt Lake City,
15 Utah. Thank you.

16 (Whereupon, at 10:20 a.m., the hearing was
17 recessed.)
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1 "This is to certify that the attached proceedings
2 before the Department of the Interior in the matter of
3 the Oil Shale Leasing Program, Cheyenne, Wyoming,
4 October 12, 1972, were held as herein appears, and that
5 this is the original transcript thereof for the files of
6 the Department.

7
8 

9 James P. Ford, Official Reporter
10 FEDERAL REPORTING SERVICE
11 991 URSULA STREET
12 DENVER, COLORADO 80011
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1 UNITED STATES OF AMERICA
2 DEPARTMENT OF THE INTERIOR
3

4 - - - - -X
5 In the Matter of: :
6 DRAFT ENVIRONMENTAL STATEMENT: :
7 FOR THE PROTOTYPE OIL SHALE : REPORTER'S TRANSCRIPT
8 LEASING PROGRAM. :
9 - - - - -X

10 Auditorium
11 Vernal Junior High School
12 721 West First South
13 Vernal, Utah
14 Thursday, October 12, 1972

15 PURSUANT TO NOTICE, the above-entitled matter came
16 on for hearing at the hour of 9:30 o'clock a.m., this date,
17 before DENT D. DALBY, Administrative Law Judge.

18 PANEL MEMBERS:

19 HENRY ASH, Oil Shale Field Coordinator, Bureau of
20 Land Management, Denver, Colorado.

21 STEVE UTTER, Bureau of Mines, Denver, Colorado.

22 HAROLD BOEKER, Bureau of Sport Fisheries and
23 Wildlife, Albuquerque, New Mexico.

24 JOHN DONNELL, U. S. Geological Survey, Denver,
25 Colorado.

I N D E X

<u>NAME:</u>	<u>PAGE NO.</u>
Gordon Harmston (Office of the Governor)	4
Howard Ritzma (Utah Geological Survey)	8
Bert L. Angus (Uintah County)	12
Buell Bent (Alvin Kay, Mayor, Vernal, Utah)	13
Glenn Cooper (Vernal Area Chamber of Commerce)	16
Charles R. Henderson (Individual)	18

P R O C E E D I N G S

JUDGE DALBY: The hearing will come to order. My name is Dent D. Dalby; I'm with the Office of Hearings and Appeals under the Department of the Interior and have been asked to conduct this hearing.

With me on the panel are Henry Ash, Bureau of Land Management; Steve Utter, the Bureau of Mines; Harold Boeker, Bureau of Sports Fisheries and Wildlife; and John Donnell of the Geological Survey.

The purpose of this hearing is to receive comments on the Draft Environmental Statement for the Proposed Prototype Oil Shale Leasing Program, pursuant to Section 102 of the National Environmental Policy Act of 1969.

In accordance with provisions of the National Environmental Policy Act, the Draft Environmental Statement was made available to the Council on Environmental Quality on September 6, 1972, and a notice of availability published in the Federal Register on September 7, 1972.

The Office of Hearings and Appeals published a notice of public hearing on the Draft Environmental Statement in the Federal Register on September 7, 1972, scheduling the hearing for today, beginning at 9:30 a.m. Interested parties wishing to appear were advised to contact the Director, James M. Day, Office of Hearings and Appeals.

Participants may submit written statements at the

1 conclusion of their oral presentation. The statement will
2 be marked as an exhibit. However, I don't wish to receive
3 written statements unless they contain materials that are
4 not presented in the oral statement here.

5 It will be helpful to the Reporter if we could
6 obtain copies of any prepared statements; and accordingly,
7 participants, after making their oral statements, will sub-
8 mit -- if you have them -- copies of the oral statement that
9 you have in writing. Written comments from those unable to
10 attend and those wishing to submit their oral statements
11 should be received by the Director, Office of Hearings and
12 Appeals, at 4015 Wilson Boulevard, Arlington, Virginia, on
13 or before October 23, 1972 for inclusion in the record.

14 As you know, a transcript is being made of this record
15 and copies of that transcript can be purchased from the
16 Reporter.

17 Now, the first person to make a presentation that
18 I have is Gordon Harmston from the Office of the Governor.
19 Will you come forward, sir, and sit right there at the table?

20 MR. HARMSTON: I'm Gordon Harmston, Director of
21 the Department of Natural Resources, and I'm here appearing
22 on behalf of the Governor, on behalf of the Natural Resources
23 Divisions in my Department.

24 The reason I came to Vernal is two-fold: First,
25 I'm a native of this region; and second, I wanted to show the

1 great interest that the State of Utah has in this region and
2 this resource. We have great natural resources in the Uintah
3 Basin just now coming into its full potential. There's more
4 money being spent in the Basin right now on oil exploration
5 than any other place in the world. Oil shale is an important
6 hydrocarbon that will take its rightful place in the energy
7 chain at the proper time. We think the proper time is now.

8 I remember when I was a child in this area, we
9 always knew we had shale in vast quantities. We've been told
10 that someday it would be developed. Right now we have a
11 raging controversy over our water. We all recognize that in
12 the arid West the limiting factor is water. Utah still has
13 225-thousand acre feet of water in its allocation of Colorado
14 River water, and presently we're attempting to write a State
15 Water Plan which will utilize our portion of the water.
16 We're taking some 160 acre feet over the Wasatch Front and
17 down into central Utah to develop the natural resources in
18 this area. The Ute Indian Unit has been projected to take
19 additional water.

20 We want to make absolutely certain that when the
21 natural resources in this area are to be developed economi-
22 cally and wisely that the water will be here to develop it with.
23 This is one of our principal concerns, that we don't take all
24 of the water out of the Uintah Basin and then when the time
25 comes to develop the hydrocarbons, there would be no water

1 to develop them with.

2 We have another great interest in this land because
3 we happen to be blessed with many thousands of acres of land
4 that is owned in fee title by the State Board. We have
5 pending an application for well over a hundred-thousand acres
6 of shale oil land that we think we are about to receive.
7 This would be an additional plus for the State of Utah and
8 for our school district. That is where the money goes that
9 it utilized from the State Land Board.

10 We have two principal concerns in this area. One
11 is the salinity of the Colorado River which is already assum-
12 ing very disastrous proportions. I say that because right
13 now we are negotiating with Mexico; if we further degrade the
14 quality of water, it's going to cause the Mexicans to be
15 unable to grow crops. Right now we're extensively studying
16 this problem, and we're going to have to do some things to
17 clean up the water that we're presently giving to Mexico so
18 they can continue to develop in the Lower Basin.

19 So, these are the two constraints, I think. The
20 one, the quality of the water that we have to watch so that
21 any development has got to have rigorous controls written
22 into it so we do not further degrade the quality of the
23 water. The other great concern, of course, is the quality
24 of our air.

25 Here, again, controversy rages. Are we going to be

1 able to utilize the billions of tons of low-sulphur coal that
2 we have in the Kaiparowits Basin and the Fremont and Uintah
3 Basins? Anyway, we have to watch the degradation of our air.

4 One of the things that brought on this great public
5 outcry against the utilization of our fossil fuels is the
6 very inadequate planning and construction job principally
7 in the Four Corners area at Farmington. Since the public
8 outcry Ventury scrubbers have been put on these units. And
9 now, honestly, what used to be a pall over the City of Farming-
10 ton and used to go into Arizona and New Mexico has practically
11 disappeared within two- or three-hundred yards of the stacks.

12 There's still oxides of nitrogen and sulphur that
13 aren't completely taken out. Technology does exist, and if
14 proper controls are put on, then we can utilize these great
15 hydrocarbon deposits.

16 I've given you the views that Utah can only advance
17 as our natural resources are developed and utilized. We
18 want to do it properly, but I have the feeling that if all
19 the Impact Statements that are now required, if all the per-
20 mits that are now required to allow any additional develop-
21 ments to take place, if these were required in the day of
22 Brigham Young, he'd still be waiting up on the hill -- waiting
23 to go down and settle the Watsatch Front.

24 It's great that we have public concern. This is
25 the reason that industry has been forced to look and do

1 further research and to do the very best job that we possibly
2 can. We were instrumental in preparing the portion of the
3 Impact Statement that relates to Utah. We did it with a
4 committee of the best people we had in the State, and the
5 fellow who did most of the work -- and I use the word advisedly
6 -- is here with us today. He's world-renowned. He has
7 really done a great job for the State of Utah and at a great
8 personal sacrifice for himself. He could have demanded much
9 larger pay.

10 As far as the adequacies of the Impact Statement is
11 concerned relating to Utah, we think we did an adequate job.
12 We think we should go ahead with the proper safeguards that
13 I have outlined, and we should develop this great resource.

14 I'll give you now Howard Ritzma who will further
15 add to my testimony.

16 JUDGE DALBY: Thank you, Mr. Harmston.

17 The second name is Mr. Ritzma.

18 MR. RITZMA: My name is Howard Ritzma, petroleum
19 geologist with the Utah Geological Survey.

20 The statement that I have to make today is in the
21 nature of a progress report on a number of matters that were
22 brought up in the original report of the State Committee on
23 the environmental problems of oil shale. The first is the
24 status of oil shale leasing on the State of Utah lands.

25 The State of Utah owns about 80,000 acres within

1 the area of thick, rich oil shale in Uintah County. All of
2 these lands are under lease for potential oil shale develop-
3 ment. Almost all other State lands on which sizeable thick-
4 nesses of oil shale are known to exist are also under lease.

5 Matter Two, status of State regulations governing
6 production of oil from oil shale and oil-impregnated sand-
7 stone. Section 40-6-3.3, Utah Code Annotated 1953, grants
8 the Board of Oil and Gas Conservation, among other things,
9 jurisdiction, as follows:

10 " -- The Board shall have and is hereby given
11 jurisdiction and authority over the development and production
12 of crude petroleum oil and gas, and crude shale oil, regard-
13 less of gravities, from bituminous sandstone and/or shale
14 deposits in any manner or form," unquote.

15 The Board has for over one year considered rules
16 and regulations governing production of oil and gas from oil
17 shale and oil-impregnated sandstone, has consulted with per-
18 sons in the mining and petroleum industries, and has held
19 public hearings at which the proposed rules and regulations
20 were discussed. The final draft of these rules and regulations
21 were adopted at a public hearing September 20, 1972.

22 Copies may be obtained from the Division of Oil and
23 Gas Conservation, 1588 West North Temple, Salt Lake City,
24 Utah 84116.

25 The third matter, mined land reclamation law proposed

1 for Utah. A committee of the Utah Legislative Council assisted
2 by a citizens committee has prepared a comprehensive mined
3 land reclamation law for consideration by the Legislature
4 which will convene in January, 1973. In its proposed form
5 the law creates a State entity to regulate mining operations
6 of all types that disturb the surface of the land. It requires
7 reclamation of mined lands and proposed standards for such
8 work.

9 The law, if passed in its proposed form, would
10 figure importantly in the regulation of future oil shale
11 development in Utah.

12 Matter Four, the status of Utah's land selection in
13 oil shale region. In partial fulfillment of Utah's continuing
14 entitlement to lands from the Federal Domain, the Division of
15 State Lands in 1970 requested that the U. S. Bureau of Land
16 Management transfer title to about 170,000 acres in southeast
17 Uintah County to the State. A sizeable portion of this land
18 is within the area of thick, rich oil shale most likely to
19 be developed, and it includes most of the area suitable for
20 open cut and shallow depth underground mining.

21 The State's selection is under consideration, but
22 no action has been taken to date.

23 Matter No. Five, probable environmental studies in
24 Utah's oil shale region. No definite plans have developed
25 for study of the specific environmental or environmentally

1 related problems in Utah. The U. S. Department of the
2 Interior Draft Environmental Statement dated September, 1972,
3 which is under consideration here today, and previous such
4 statements and supplemental material by Federal agencies have
5 shed a great deal of light on the problems which may arise
6 and have presented much basic data on which action may be
7 predicated.

8 It is likely that some studies may begin in Utah
9 in late 1972 or early 1973 under the auspices of the University
10 of Utah Engineering Experiment Station. The studies will be
11 part of a survey of clean energy sources initiated by the
12 National Science Foundation.

13 Just a side mention here. There may be some delay
14 in this due to the death recently of Doctor Larson, the
15 director of the Engineering Experiment Station. His loss is
16 and will be much felt in this matter.

17 Item No. Six, progress on "housekeeping" items men-
18 tioned in Utah's report on environmental problems of oil
19 shale. Work has been undertaken to settle the uncertainties
20 in the boundary between Grand and Uintah Counties. No action
21 has been initiated regarding the position of the Naval Oil
22 Shale Reserve or the lands controlled by the Ute Indian Tribe
23 in the total oil shale picture in Utah.

24 This ends my statement.

25 JUDGE DALBY: Are there any questions for Mr. Ritzma?

1 (No response.)

2 JUDGE DALBY: That's all then. Thank you, Mr.
3 Ritzma. We appreciate your being here.

4 MR. RITZMA: I have copies here in case anyone
5 wants one.

6 JUDGE DALBY: The third name I have here is Mr.
7 Angus representing the Uintah County.

8 MR. ANGUS: Thank you. I'm Bert Angust of the
9 Uintah County Commission. We have been concerned, like Mr.
10 Harmston said, all of our lives about the oil shale deposits
11 that are here within the Basin. And since in Uintah County
12 a great portion of the land is Federally and State owned,
13 thus bringing no tax to the County, we are interested in any
14 development that will assist our people here.

15 In our meeting Tuesday -- the official meeting of
16 the County Commissioners -- we passed the following resolu-
17 tion, which I should like to read.

18 "WHEREAS, the Board of County Commission of Uintah
19 County recognizes the need for a new source of energy, and

20 "WHEREAS, we understand there are large reserves
21 of oil shale concentrated in Utah, Wyoming, and Colorado,
22 which if developed, would considerably relieve said shortage,
23 and

24 "WHEREAS, the development would bring needed growth
25 to Uintah County, and

1 "WHEREAS, the Uintah County Commission believes in
2 orderly development of our natural resources,

3 "NOW, THEREFORE, BE IT RESOLVED that the Uintah
4 County Commission does hereby support the orderly and planned
5 development of oil shale, and recommends that the development
6 be carried out in such a manner that would create a minimum
7 of disturbance to the ecology, and particularly that such
8 development would include replanting of grasses and other
9 plant life which would support and sustain grazing of live-
10 stock and wildlife.

11 "Dated at Vernal, Utah, this 10th day of October,
12 1972."

13 This is signed by the three County Commissioners,
14 Hyrum Slaugh, Chairman, Bert L. Angus, and Melvin J. Burke.

15 JUDGE DALBY: Thank you, Mr. Angus.

16 MR. ANGUS: Here are some copies if you are interested
17 in this.

18 JUDGE DALBY: The next name is Mr. Bent who is
19 representing -- is here representing Mayor Kay.

20 MR. BENT: Mayor Kay had prepared a statement, but
21 knowing he'd be out of town this morning, he asked me to
22 present his statement for him.

23 JUDGE DALBY: Will you give us your name first?

24 MR. BENT: I'm Buell Bent, B-u-e-l-l, City Planning
25 of Vernal.

1 He starts out, "I am Mayor Kay, and I wish to offer
2 the following statement in support of making available for
3 private development oil shale leases in the three-state area
4 of Utah, Colorado, and Wyoming.

5 "There is now great concern, as to where our future
6 sources of gasses and oils will come from. We are told that
7 there will be a shortage of gas supplies in less than ten
8 years, that we will import from overseas more and more of
9 our oils as our needs continue to grow and our own supplies
10 are exhausted. We presently are looking to Alaska to relieve
11 the shortage that is most eminent.

12 "We have here in this three-state area oil shale of
13 such great deposits to alleviate fuel shortages for future
14 generations of American citizens. If these oil shales are
15 developed, great industrial growth will provide jobs and live-
16 lihood for many workers and families in Uintah County and the
17 adjacent areas.

18 "The people of this area have always planned that
19 oil shale would eventually play an important part in the
20 economy of this region. That many new jobs would be created,
21 thereby providing a population growth. That a new tax base
22 for local and State Government would come into being.

23 "The time is now ripe for these things to happen.
24 There is a need for more fuels. There is many billions of
25 barrels of oil in our door yard in the form of oil shale.

1 There now has been advancement in know-how to develop and
2 convert to oil one of the world's greatest undeveloped sources
3 of power.

4 "There are ecologists and environmentalist who oppose
5 oil shale leasing and developing on the same grounds they
6 oppose most everything that may change the natural state of
7 our ecology. I also oppose development that will result in
8 a barren waste. I have full confidence that oil shale lands
9 can and will be developed under such methods and controls
10 that will not detract from the present condition of the oil
11 shale lands, and may even enhance the quality of plant and
12 animal life now sustained on these areas.

13 "It is most important that steps be taken to pre-
14 pare the way for leasing oil shale lands in parcels of suffi-
15 cient size that developers may be interested. Unless this is
16 done, advancement in oil shale development will not material-
17 ize. We will continue to deplete our present known sources
18 of fuels, making our nation more dependent on foreign sources
19 for oils.

20 "It will take considerable time to set up leasing
21 procedures and much longer for developers to design and put
22 in operation plants capable of producing oil from shales that
23 will compete with conventional oil production. For the future
24 security of our nation there should be no further delay in
25 making oil shale leases available to industries capable of

1 large-scale production."

2 It is signed, Alvin Kay, Mayor.

3 JUDGE DALBY: Thank you, Mr. Bent.

4 I have the name of Glen Cooper on my list from the
5 Vernal Area Chamber of Commerce. Is Mr. Cooper here?

6 MR. COOPER: I'm Glen Cooper, Chairman of the
7 Industrial Development Committee of the Vernal Area Chamber
8 of Commerce. I'm here representing the entire Chamber of
9 Commerce after their adoption of our resolution last Tuesday
10 in our Board meeting. And I have this resolution before me
11 today.

12 I would like to state this, that I am also, as
13 Gordon Harmston mentioned, a native of the Uintah Basin.
14 I've lived here all my life, and I've heard the word "oil
15 shale" since I was a mere child. It seems to continue on
16 and on, and nothing has been done about it.

17 And so I'd like to read this resolution from the
18 Vernal Area Chamber of Commerce which it has brought forth
19 this day.

20 The resolution reads, "WHEREAS, the Vernal Area
21 Chamber of Commerce recognizes the need for a new source of
22 energy, and

23 "WHEREAS, we understand there are large reserves
24 of oil shale concentrated in Utah, Wyoming, and Colorado
25 which, if developed, would considerably relieve said shortage,

1 and

2 "WHEREAS, this concentration of oil shale is one
3 of the last known reserves of hydrocarbon, and

4 "WHEREAS, the Vernal Area Chamber of Commerce
5 believes in orderly development of our natural resources.

6 "NOW, THEREFORE, BE IT RESOLVED that the Vernal
7 Area Chamber of Commerce does hereby support the orderly and
8 planned development of oil shale, and

9 "BE IT FURTHER RESOLVED that said development be
10 carried out in such a manner that would create a minimum of
11 disturbance to the ecology, and particularly that such develop-
12 ment would include replanting of grasses and other plant life
13 which would support grazing of livestock and wildlife, and
14 would ultimately enhance the ecology of the development area.

15 "Dated at Vernal, Utah, this 12th day of October,
16 1972."

17 I thank you.

18 JUDGE DALBY: Thank you, Mr. Cooper.

19 I understand there's a representative of the Oil
20 and Gas Conservation Department here. Is anybody represent-
21 ing that organization?

22 MR. RITZMA: No, they're going to testify tomorrow
23 in Salt Lake City.

24 JUDGE DALBY: All right. Is there a present repre-
25 sentative of the Land Board here?

1 MR. RITZMA: They'll also testify in Salt Lake.
2 We're trying to cut down on the travel expenses.

3 JUDGE DALBY: Very commendable.

4 Now, the next name I have here is that of Mr. Penny,
5 representing Shell Oil Company.

6 MR. PENNY: Mr. Dalby, Shell does not wish to make
7 a statement at this time. Thank you.

8 MR. DALBY: Does Gulf Oil Company have any represen-
9 tative?

10 (No response.)

11 JUDGE DALBY: No. I also have an indication that
12 perhaps Skyline Oil would have a representative.

13 (No response.)

14 JUDGE DALBY: I hear no response.

15 MR. RITZMA: I think most of these people will be
16 in Salt Lake.

17 JUDGE DALBY: Is there anybody else here who wishes
18 to make a statement for the record? Would you come forward?

19 MR. HENDERSON: I thought I was on that list; I
20 apologize, gentlemen. My name is Charles R. Henderson. I'm
21 also a local individual, raised here in the Uintah Basin.

22 I do not attempt at this time to qualify myself as
23 an expert, but I will let my testimony speak for itself.

24 I have had a lot of direct and indirect connection
25 with the oil shale and the State land problems, having served

1 on State land boards and oil and gas -- the Oil and Gas Com-
2 mission, of which I'm presently a member.

3 However, today I'm speaking strictly as an indivi-
4 dual and speaking as the owner and operator of the C. R.
5 Research Company, Vernal, Utah.

6 My subject is -- and I have tried to contain this
7 subject to the aspects of the Environmental Report, and you
8 will discover that I have some variances of opinion. And
9 I've kept this as short as possible and attempted to keep as
10 close to the intent of the Impact of the Environmental Report
11 as possible.

12 The subject is environmental and economic aspects
13 of developing oil shale into gas, oil, and/or electricity
14 for the maximum benefit of all the people of this United
15 States.

16 The word oil shale, which is used to describe or
17 name a shale that contains no oil, as such, may be a misnomer
18 or simply an improperly named mineral compound. However, the
19 word oil shale has by use become an acceptable name for a
20 mineral compound which is found in over twenty of our United
21 States and many foreign countries.

22 The principal combination of hydrocarbons found in
23 oil shale has been classified as kerogen. Kerogen, when
24 heated and treated by many and various methods, will change
25 its chemical chain and become a useful hydrocarbon, generally

1 classified as an oil or gas.

2 The three states -- Utah, Colorado, and Wyoming --
3 share one of the largest known deposits of oil shale. The
4 combined deposits are known to cover thousands of square
5 miles, running from surface exposures to depths of over 14,000
6 feet. These beds are of variable thickness and richness,
7 and they contain many associated minerals.

8 I would like to address myself to the mining of oil
9 shale for the production of energy in the form of gas, oil,
10 and/or electricity, and the revegetation of the oil shale
11 residue as an additional public benefit possible from orderly
12 and properly planning the development of these tremendous
13 energy sources.

14 While attending the University I spent a lot of
15 extra time in the chemistry lab, experimenting with the
16 various types and kinds of hydrocarbons found in the Uintah
17 Basin. These hydrocarbons included oil shale, gilsonite,
18 bituminous sandstone, and several others.

19 The oil shale, because of its tremendous volume and
20 its curious combination of hydrocarbons and salts, aroused
21 my curiosity, and I continued my research and experimentation
22 thereon. Three of the last ten years was devoted almost
23 exclusively to research on oil shale, delaying my research
24 only when it became evident that the Federal Government
25 would make little if any of the essential oil shale land

1 available for the development, or grant any assurance of
2 acquiring adequate reserves to justify the huge cost of
3 research and pilot plants and construction and shake-down of
4 a plant large enough to make an economic operation.

5 Incidentally, some 40 years ago I found my wife in
6 the oil shale hills of the Book Cliffs; part of their ranch
7 house had been moved from one of the early shale camps. Since
8 that time I have developed a great interest and attachment
9 for the area and attachment for the area, and became concerned
10 as to what effect the development of the oil shale would have
11 upon the environment of that region. I decided to find out,
12 and my studies and experiments have led me to many interesting
13 conclusions, some of which I think will be of interest to you.

14 My experiments have proven to me that the residue
15 from mining and retorting of the oil shale, if handled proper-
16 ly, will germinate and support plant life and support it in
17 more abundance than does the actual shale in place. The
18 residue and tailings and waste from any shale mining operation
19 will be large in volume, larger than the original volume
20 removed; and therefore, additional space will be required.
21 Since it cannot be returned to its original condition, it
22 should be and could be improved.

23 The oil shale area in general, where exposed or
24 nearly exposed, is heavily eroded on the surface and encourages
25 floods and creates flood plains and causes or encourages more

1 erosion, even though the shale is quite resistant to erosion.

2 Properly planned and orderly developed, the large
3 volume of residue could be properly placed and contoured to
4 eliminate the flood plains and help maintain the essential
5 moisture to support vegetation. The area should be able to
6 provide forage for wildlife, game, and livestock in more
7 abundance than in its natural state.

8 Oil shale areas are generally short of water, and
9 particularly in the late summer. The development of oil shale
10 will require the saving, storage, or importation of water --
11 in an already water-short area.

12 Many people think of the oil shale, because of its
13 tremendous calculated amounts of potential oil, as a great
14 reserve which could be taken in huge quantities, if and when
15 needed. This is definitely not the fact.

16 The water requirements alone would probably defeat
17 the massive development desired if we found ourselves with
18 our imports of gas and oil cut off, or the oil shale develop-
19 ment is delayed until we find ourselves in a real acute energy
20 crisis.

21 Oil shale energies should be considered supplemental
22 sources and not emergency energy reserves.

23 My experiments bring me to one more interesting
24 conclusion. There is a highly efficient method of converting
25 the energies from oil shale into electricity, a method which

1 would use very limited amounts of water and contribute almost
2 no or little contamination to the atmosphere.

3 Therefore, the early and orderly development of
4 this energy supplement to our present energy is most impor-
5 tant.

6 I thank you.

7 JUDGE DALBY: Any questions of Mr. Henderson?

8 MR. ASH: Mr. Henderson, do you have information
9 on your revegetation research that you might be able to supply
10 the Department in preparation of a final statement?

11 MR. HENDERSON: I haven't properly compiled the
12 information, but it could be done. And I could tell you
13 verbally what I have done.

14 I have taken the residue from retorts which I have
15 used myself which have covered various means of taking the
16 oil from the oil shale. I have picked up residue from every
17 place I've had an opportunity where they are retorting oil
18 shale, and I have taken them and found that in almost every
19 case -- in fact, I can say in every case -- they haven't all
20 turned out perfect, but I've found out that they all will
21 support life.

22 There's some problems involved in it which I don't
23 want to get into the details of at the moment because they're
24 very complicated because of the salt situation. That can be
25 handled.

1 And I have planted various types of grasses, other
2 types of seeds, and other -- and set them in the window
3 where they didn't have the most perfect conditions, and they've
4 germinated and grown and developed until they became a
5 nuisance to me and I threw them away.

6 I could probably offer you some information.

7 MR. ASH: Thank you.

8 JUDGE DALBY: Thank you, Mr. Henderson.

9 Does anybody else wish to make a presentation here?

10 (No response.)

11 JUDGE DALBY: I hear no response.

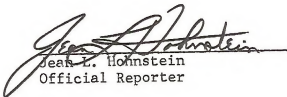
12 The Director of the Office of Hearings and Appeals
13 has asked me to express his personal thanks for the time and
14 effort contributed by the participants at this meeting. And
15 the comments and opinions will be of assistance to the Bureau
16 of Land Management, and all of the comments will be carefully
17 considered.

18 And if there is nothing further, this hearing is
19 adjourned.

20 (Whereupon, at 10:15 o'clock a.m., the hearing in
21 the above-entitled matter was closed.)
22
23
24
25

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the Department of the Interior in the matter of: DRAFT ENVIRONMENTAL STATEMENT FOR THE PROTOTYPE OIL SHALE LEASING PROGRAM, at Vernal, Utah, Thursday, October 12, 1972, was held as herein appears, and that this is the original transcript thereof for the file of the Department.


Jean L. Hohnstein
Official Reporter

1 UNITED STATES OF AMERICA
2 DEPARTMENT OF THE INTERIOR

3
4 - - - - - x
In the Matter of: :
5 :
DRAFT ENVIRONMENTAL STATEMENT :
6 FOR THE PROTOTYPE OIL SHALE :
LEASING PROGRAM :
7 :
- - - - - x

8
9 Auditorium
State Office Building
10 Salt Lake City, Utah
Friday, October 13, 1972

11 The above-entitled matter came on for hearing at the hour
12 of 9:30 o'clock a.m., this date.

13
14 BEFORE:

15 JAMES M. DAY, Director, Office of Hearings and
Appeals, U. S. Department of the Interior,
16 Washington, D. C.

17 PANEL MEMBERS:

18 KENNETH ROBERTS, Bureau of Sports Fisheries and
Wildlife

19 ALBERT LEONARD, Bureau of Land Management

20 REID STONE, Oil Shale Coordinator

21 ANDREW W. DECORA, Bureau of Mines
22
23
24
25

I N D E X

	<u>Page No.</u>
<u>WITNESSES:</u>	
Paul Duggan	8
Frank J. Allen	9
E. J. Merrick	16
Stanley Mulaik (no appearance)	
Midge Collins	17
Leslie A. Jones	19
Mr. Lamb	24
Mrs. Nyla Kladder (no appearance)	
Louis H. Yardumian	28
Max D. Eliason	32
John Morgan, Jr.	50
Mr. Cleon Feight	57
Howard R. Ritzma	58

E X H I B I T S

<u>SALT LAKE CITY EXHIBITS</u>	<u>MARKED FOR IDENTIFICATION</u>
No. 1	48
No. 2	48
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No. 5	57

P R O C E E D I N G S

MR. DAY: This hearing will come to order. My name is James M. Day. I am Director of the Office of Hearings and Appeals, United States Department of the Interior.

Sitting on the panel as representatives of the Department are Mr. Reid Stone, Oil Shale Coordinator; Mr. Andrew DeCora, Bureau of Mines; Mr. Albert Leonard, Bureau of Land Management; and Mr. Kenneth Roberts, Bureau of Sports Fisheries and Wildlife.

The purpose of this hearing is to receive comments on the Draft Environmental Statement for the Proposed Prototype Oil Shale Leasing Program, pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969.

In accordance with provisions of the National Environmental Policy Act, the draft environmental statement was made available to the Council on Environmental Quality on September 6, 1972, and a Notice of Availability published in the Federal Register on September 7, 1972. This document has been marked as Exhibit 1.

The Office of Hearings and Appeals published a Notice of Public Hearing on the draft environmental statement in the Federal Register on September 7, 1972, scheduling the hearing for today, beginning at 9:30 a.m. Interested parties wishing to appear were advised to contact:

Director, James M. Day
Office of Hearings and Appeals
U. S. Department of the Interior
4015 Wilson Boulevard
Arlington, Virginia 22203

on or before October 2, 1972.

An official reporter, Cheryl M. Woods, will make a verbatim transcript of the hearing. All matter that is spoken while the hearing is in session will be recorded by the reporter. In order to insure a complete and accurate record of the hearing, it is absolutely necessary that only one person speak at one time.

While the hearing is in session, no one will be recognized to speak other than the parties who wish to present statements.

It should be understood that this is not an adversary proceeding. The participants presenting their views will not be sworn or placed under oath. There will be no examination or interrogation of any of the participants. However, the panel may ask witnesses questions in order to clarify matters brought out in the testimony.

The participants will be called in the order shown on the list available at the press table.

Although there will be no strict procedural rules, I would like to stress two important points. The first is that the presentations should be relevant and supported by pertinent data.

1 If any comment is directed to the draft
2 environmental statement, please refer to the applicable pages
3 of that statement, and if information is quoted from technical
4 or scientific journals or other publications, please give the
5 name, author, page number and date of the publication.

6 Participants may submit written statements at the
7 conclusion of their oral presentations. The statements will
8 be marked as exhibits. I do not, however, wish to receive
9 written statements as exhibits unless they contain material
10 that has been covered in the oral presentation.

11 It will be quite helpful to the reporter if we could
12 obtain copies of any prepared statements. Accordingly, the
13 participants will be contacted as they approach the speaker's
14 table to see if copies of their presentation are available.
15 Any such statements will not, however, become a part of the
16 record unless a specific request is made and unless it
17 contains material that is not covered in the oral
18 presentation.

19 Oral statements at the hearing will be limited to
20 a period of 10 minutes. This limitation will be strictly
21 enforced. To the extent that time is available after
22 presentation of oral statements by those who have given
23 advance notice, I will give others present an opportunity
24 to be heard.

25 Written comments from those unable to attend, and

1 from those wishing to supplement their oral presentation at
2 the hearing, should be received by the Director, Office of
3 Hearings and Appeals, at the address previously stated, on
4 or before October 23, 1972, for inclusion in the record.
5 However, because of the great interest in this program and
6 the volume of the environmental impact statement, we are
7 announcing this morning that the time will be extended to
8 November 7.

9 A transcript of this public hearing will be prepared
10 and the final environmental statement will reflect the
11 comments of this hearing where appropriate.

12 Copies of the transcript of this hearing can be
13 obtained by making arrangements with the official reporter.
14 Copies of all written statements can be obtained by making
15 appropriate arrangements with the Director, Office of Hearings
16 and appeals.

17 The Secretary of the Interior, Rogers C. B. Morton,
18 has asked me to express his personal thanks for the time and
19 effort contributed by all of the participants in this meeting.
20 The comments and opinions received will be of valuable
21 assistance to the Department. All comments will be carefully
22 considered in accordance with applicable provisions of the
23 National Environmental Policy Act of 1969.

24 At this time, I would like to read into the record
25 a statement by Senator Bennett of Utah.

1 "I appreciate this opportunity to present testimony
2 in support of the Department of Interior's Proposed
3 Prototype Oil Shale Leasing Program.

4 Because of the pressing need for new sources of
5 clean energy, President Nixon's announcement of a new
6 leasing program on Federal oil shale lands in Utah, Wyoming
7 and Colorado was warmly applauded.

8 As the Deseret News recently stated 'By the end of
9 this decade the United States may be faced with an oil
10 shortage unless it starts planning ahead now to meet this
11 contingency. With energy demands doubling every 10 years,
12 America has become increasingly dependent on foreign oil
13 supplies that could easily be cut off in the event of war or
14 some other international crisis.'

15 There is no commercial production of shale oil in
16 the United States at this time, because a mixture of
17 problems -- environmental, technical, and economic -- have
18 thwarted past efforts at development. For the past 30 years
19 there has been a procession of programs, pilot plants,
20 demonstrations plants, project and studies of oil shale on
21 which the Draft Environmental Statement is based. If we
22 are ever to develop this valuable resource, it must be now.

23 Therefore, I hope the Department of the Interior will
24 meet its timetable and issue its first leases in December 1972.

25 The oil from shale, besides being relatively low in

1 potential pollutants, could help meet a substantial portion
2 of the Nation's energy needs for many decades. But
3 development of plants and transportation facilities will
4 take time and even if there are no further delays shale oil
5 cannot be expected to come on stream till the 1980's.

6 The development of a viable oil shale industry would
7 greatly broaden Utah's tax base and would provide a much-
8 needed economic stimulus to the Uintah Basin.

9 I was especially pleased to learn from the Draft
10 Environmental Statement that the effects on the environment
11 would be minimal in the isolated tracts chosen for the Utah
12 program. Both the President and Secretary Morton have
13 stressed that the Administration is irrevocably committed to
14 the maintenance of the environmental integrity of the oil
15 shale area and no development of public oil shale lands will
16 be authorized until the Secretary is convinced that all
17 requirements can be met.

18 I hope we can go forward with this program that will
19 mean so much to our State and Nation."

20 The first witness this morning I call is a
21 representative from the Equity Oil Company.

22 MR. DUGGAN: I am Paul Duggan and I delivered a
23 statement in Denver last Tuesday. I wish to thank you for the
24 opportunity to appear here today. We have nothing further
25 to say at this time, but we may make a comment further in

1 writing before the deadline.

2 MR. DAY: Thank you.

3 I will now call Mr. Frank Allen.

4 MR. ALLEN: My name is Frank J. Allen. I am Vice-
5 President of Western Oil Shale Corporation. Western Oil
6 Shale Corporation holds some 76,000 acres of State of Utah
7 oil shale leases of lands in Utah's Uintah Basin. The
8 Corporation has long been dedicated to the concept that much
9 of the nation's deep-lying oil shale is amenable to in situ
10 processing if permeability of the host material can somehow
11 be induced. The Corporation is further dedicated to the
12 concept that the release of nuclear energy and perhaps some
13 lesser explosive force would produce the necessary
14 permeability.

15 To demonstrate the theoretical feasibility and safety
16 of a nuclear approach to recovery of oil from shale, Western
17 Oil Shale Corporation sponsored a symposium on the subject
18 at Laramie, Wyoming, on February 17, 1971. At the symposium,
19 papers were presented by representatives of the Bureau of
20 Mines' Laramie Energy Research Center, the Atomic Energy
21 Commission's Lawrence Radiation Laboratory, and CER Geonuclear
22 Corporation. It was clearly the view of the participants in
23 that symposium that vast quantities of oil shale could be
24 made susceptible to in situ recovery treatment with nuclear
25 explosives without real concern for environmental degradation.

1 At this time, our comment is solicited on an
2 Environmental Statement. We find the Statement to be an
3 intense work a prodigious work, perhaps even a monumental
4 work. On no occasion in history, possibly with the exception
5 of the Children's Crusade, has no much effort been expended
6 in support of an obviously wrong view.

7 Our fundamental criticism of the Statement is that
8 it attempts to justify an oil shale policy that is not a
9 policy at all; it is rather an abnegation of responsibility,
10 at a time of national energy crisis, to adopt a positive
11 program with regard to our most abundant fuel resource,

12 The Department's policy and Statement are totally
13 oriented to a mine-retort technology suitable for a small
14 percentage of the oil shale deposition. The objective seems
15 to be to make a little more resource available to companies
16 which have already developed an art from recovering oil
17 from rich shale.

18 We submit that total reliance on the technology
19 already perfected will not contribute significantly to the
20 effort to achieve national self-sufficiency where energy
21 is concerned. We further submit that the approach exclusively
22 endorsed by the Department creates the highest risk of
23 contamination.

24 To some degree, the criticism we express can be
25 justified by reference to the Environmental Statement itself.

1 We will consider the concerns above articulated separately
2 in the light of the data contained in this Statement.

3 I

4 THERE IS LIMITED MATERIAL AMENABLE
5 TO A MINE-RETORT APPROACH

6 The total oil content of the oil shale deposition
7 over the three state area is often expressed in trillions of
8 barrels. Nevertheless, the kind of occurrence thought to
9 be ideal for mine-retort exploitation would average 30
10 gallons per ton through a 30 foot interval (Chapter II,
11 Page 9). The National Petroleum Council (ibid) estimates
12 that 130 billion barrels of oil is contained in deposits
13 meeting these criteria with less than 1,500 feet of over-
14 burden. Such deposits are found almost exclusively in the
15 Piseance Creek Basin. This sounds like a resource which
16 could make a major contribution to the solution of the
17 energy problem. Unfortunately, the Statement also reveals
18 (Chapter II, Page 23) that about 2 1/2 million acre feet of
19 water is stored in the Green River formation of the Piseance
20 Creek Basin. We interpret the ground water summary to
21 indicate that this ocean of water is predominantly found in
22 the upper regions of the formation. We, therefore, postulate
23 that much of the material containing the estimated 130 billion
24 barrels could be mined only if the means of coping with this
25 vast quantity of water were designed. It appears that much

1 of the water is saline and less than potable and could not
2 simply be diverted into water courses on which the populace
3 relies.

4 In any event, the procedures of mining, sizing and
5 retorting shale, disposing of waste and upgrading the fuel
6 substance involve plant and expenses which only a few major
7 oil companies could undertake. It may well be that the
8 available rich, shallow oil shale will support a considerable
9 industrial effort, that is, the enterprise will be profitable
10 for the companies which engage in it. The total output
11 from such plants can hardly satisfy any major percentage of
12 the country's fuel needs.

13 II

14 THE MINE-RETORT APPROACH PRESENTS THE 15 HIGHEST RISK OF ENVIRONMENTAL DEGRADATION

16 Beginning at Page 21 of Chapter I of the Statement,
17 the problems of waste disposal from a surface retort are
18 discussed. Some disposition other than consumption must be
19 made of about 85 percent of material mined which will, after
20 processing and removal of the fuel component, have a volume
21 of about 12 percent in excess of the volume of the total
22 material originally mined. The Statement seems to accept
23 as perfectly sound the proposition that the waste material
24 can simply be returned to the space from which it was removed.
25 The Statement does not relieve our apprehension that the

1 return of waste materials to an operating mine will prove
2 to be an unsafe, uneconomic, and physically impossible task.
3 If the waste is disposed of by dumping on the surface, the
4 mechanics of pollution are well delineated by the report.
5 One must be concerned about the leaching of water soluble
6 components of spent shale which are highly alkaline. One
7 must be concerned about the dust, one must be concerned about
8 the effect on vegetation and general land contours, and one
9 must be concerned about the aesthetics.

10 III

11 IN SITU METHODOLOGY MUST FINALLY BE 12 DEVELOPED IF THE OIL SHALE RESOURCE IS TO 13 BECOME A SIGNIFICANT FACTOR

14 The Statement asserts that there are, in oil shale
15 zones averaging 15 to 25 gallons per ton, some 1,200 billion
16 barrels of oil content (Chapter II, Page 9). In general,
17 the Statement adopts the view that any material averaging
18 less than 25 gallons per ton is not worthy of short-term
19 consideration. The magic figure "25 gallons per ton" has
20 relevance only to a mining approach to oil recovery. We are
21 told that the figure was a calculation by a committee which
22 figured the cost per ton of mining material, the cost of
23 retorting and the efficiency of the retort process. At a
24 market price per barrel of oil at the time of the calculations,
25 it was not theoretically profitable to mine and retort material
which did not contain 25 gallons per ton. If in situ program

1 is employed, the calculations which support the 25 gallon
2 per ton figure as the economic cut off point are no longer
3 relevant. The critical question, when in situ programs are
4 engineered, is simply what richness of shale will release
5 significant fuel substance if it is rubbelized in place and
6 appropriately heated. The Bureau of Mines at Laramie has
7 attempted to simulate underground conditions in above ground
8 retorts and has concluded that shale of the order of 15 gallons
9 per ton could produce oil economically if a number of assump-
10 tions about what would happen if nuclear energy were released
11 in formation are indulged. The advantages of in situ treat-
12 ment inhere in the facts that there are no disposal problems,
13 a much vaster resource becomes worthy of consideration, and
14 the end result is a superior product. At Chapter I, Page
15 36 of the Environmental Statement, the compilers report that
16 oils from in situ operations appear to have lower pour points,
17 viscosities and nitrogen contents. What disturbs us is that
18 Interior plans no effort in the near or even remote future
19 to advance the technology oriental to those shales which
20 are our real hope for national self-sufficiency.

21 IV

22 IT IS THE OBLIGATION OF THE FEDERAL 23 GOVERNMENT TO ADVANCE THE STATE OF THE ART

24 Without question, the United States owns the great
25 majority of the oil shale resource in the United States.
Particularly, it owns the deep shales which, if materials

1 averaging 15 gallons per ton are considered, contains some
2 90 percent of the total oil in place. In commenting on
3 planning for a nuclear experiment in Utah, the Statement
4 makes no reference to our symposium. Instead it cites a
5 Tribune article by Robert Woody. (Reference 26)

6 The United States also has exclusive access to the
7 only form of energy which could be expected to propagate
8 in formation the kind of permeability which is a
9 prerequisite to in situ treatment. These deep shales
10 represent trillions of barrels of oil and yet the United
11 States has consistently refused to detonate in oil shale
12 formation devices in the size range commonly detonated on
13 an almost weekly basis at the Las Vegas test site. The
14 Departmental Statement shows that the United States is
15 content with an oil shale policy which will simply make
16 available to major oil companies areas which are ideally
17 suited to technologies which are extremely expensive to
18 employ and which cannot be expected to produce enough oil
19 to afford real relief in the crisis. We submit that the
20 Federal Government should take the lead in an immediate
21 intensive effort to find a technology to which the major oil
22 shale resource will be susceptible. We are submitting with this
23 Statement a copy of the Transcript of Proceedings at the
24 symposium above referred to. The symposium clearly suggests
25 one rather inexpensive procedure that could be followed to

1 establish whether or not we can really look to oil shale as
2 a meaningful supplement to the nation's traditional energy
3 sources.

4 Thank you.

5 MR. DAY: Thank you, Mr. Allen.

6 Mr. E. J. Merrick, National Wildlife Federation
7 representative.

8 MR. MERRICK: Edwin J. Merrick, Southwestern
9 Representative for the National Wildlife Federation, and we
10 provided a statement in Denver, Colorado. I simply want to
11 take this opportunity to make a few points a little more
12 clear, perhaps.

13 I do want to emphasize that we feel the oil shale
14 technology is too primitive to proceed with and should not
15 proceed until further laboratory development has been carried
16 out and a critical and knowledgeable citizen's committee can
17 review the progress and plans.

18 Secondly, should prototype leasing proceed regardless
19 of the stipulation requiring no less than the following:

20 (A) That an overseer's committee of representatives
21 of government, industry, conservation, wildlife and concerned
22 citizens review and approve the plans and progress in all
23 prototype developments.

24 (B) That specific legal clauses with respect to
25 handling, control and replacement of overburden as well as

1 spent shale.

2 (C) Specific clauses with respect to control of
3 contaminant levels in air, water and total surrounding
4 environment be included.

5 (D) That specific clauses with respect to measure-
6 ment, monitoring and the care and enhancement of all aquatic
7 and wildlife in the prototype areas.

8 (E) Specific clauses requiring public release of the
9 continuous status of all pollution and contaminant levels
10 during the life of these prototype leases.

11 Finally, and subsequently, we have a common concern
12 in the preservation of wildlife for future generations. That
13 you have a critical responsibility here. Do not be overly
14 hasty. Seek a democratic approach and solicit the aid of
15 concerned citizens who seek not profit but a concern that
16 environmental justice be done.

17 Thank you very much.

18 MR. DAY: Thank you, Mr. Merrick.

19 I will now call Mr. Stanley Mulaik on behalf of the
20 Utah Nature Study Society. Repeating Mr. Stanley Mulaik on
21 behalf of Utah Nature Study Society.

22 (No response.)

23 I now call Midge Collins.

24 MS. COLLINS: I am Midge Collins, 2775 Oneida Lane,
25 Provo, Utah.

1 Q What is to become of the 300 species of wildlife
2 found in the area of the proposed development?

3 A Mule deer, mountain lion, bear, elk, sage grouse,
4 antelope, blue grouse and migratory birds would be most
5 affected as well as approximately 500 wild horses that range
6 in the region. They will be endangered by construction, noise
7 from mining and refining, possible oil pipeline leakage,
8 human population increases, and the loss of food and cover
9 due to the disposal of oil shale wastes.

10 Q Can we cope with the massive amounts of waste?

11 A A full scale industry producing 3 million barrels of
12 oil per day would require disposal of 4,500,000 tons of spent
13 shale per day. This would cover 4,640 surface acres every
14 year. After plenty of fertilization and constant watering
15 of the waste, vegetation will be established again, however,
16 the natural plant community of the area will be destroyed.

17 Q How can orderly, high quality development and
18 planning occur?

19 A The temporary population during construction would
20 be more than double the permanent population at the sites
21 when construction is completed.

22 Q Do we really need oil shale development?

23 A By the time shale oil makes it contribution to our
24 energy supplies (1980) other energy sources, more acceptable
25 environmentally, may be found. For instance, garbage, trash

1 and animal wastes have successfully been converted into low-
2 sulfur oil by the U. S. Bureau of Mines. I urge the
3 establishment of a National Energy Policy before another
4 major public resource is developed.

5 MR. DAY: Thank you.

6 Mr. Leslie A. Jones, Heber City, Utah.

7 Mr. Jones, give a short address for the record.

8 MR. JONES: It is on the presentation. I appreciate
9 the opportunity to appear at this time, and all of these
10 presentations are presenting viewpoints that act as checks
11 and balances to each other and I trust the Board will treat
12 them equitably for this is the necessary procedure.

13 I will read what I have, but I subscribe to much of
14 the comments of Mr. Allen and Mr. Merrick, and I am in
15 sympathy with some of the things Senator Bennett said.
16 ENVIRONMENTAL IMPACT OF THE EXTRACTION OF OIL SHALE IN THE
17 STATES OF COLORADO, WYOMING AND UTAH AND CONTROL OF THE
18 IMPACT ON THE ENVIRONMENT. Man will have to use the oil in
19 oil shale. But how fast? I feel the technique for
20 extraction with minimum environmental impact should continue
21 to be researched and perfected in pilot plants and in very
22 small scale production for at least fifteen to thirty years
23 yet. And I feel the extraction should proceed, when it has to,
24 at a rate slow enough that the environmental impact can be
25 absorbed by the earth with some help from man, adequately to

1 insure an inspirationally liveable land for man. Man cannot
2 live in peace with himself and his neighbors without
3 inspiration. Only the beauty of the land, the rivers, the
4 seas and the heavens can provide this.

5 And rivers and streams are the heart of all land
6 based ecological systems, And they will be the hardest hit
7 by the development of oil shale. To extract the oil they
8 need a slow and careful development of oil extraction in
9 quantity, particularly in a deseret country, to be able to
10 handle the alkalies, minerals and acids and to provide water
11 without robbing all other interests of water in the locale of
12 oil extraction plants. I subscribe to Dr. J. R. Guadagno's
13 water report that was submitted to me previously. So, we
14 take time, we plan and we prepare for whatever we do. I am
15 a member of the Audubon Society, National Wildlife Federation,
16 EDF and I represent the interests of the American Canoe
17 Association and WRG. I have worked in engineering for thirty
18 years, and have been involved in the mining of Gilsonite and
19 the development of the modern plant designs for the extraction
20 of oil from shale with other minerals. There is much, obviously,
21 I do not understand about it, but I think this stands for
22 all of us. I helped build the Western River Guides who run
23 the rivers through these lands of oil shale and know them
24 and their geology well.

25 But my real qualifications to speak here are: I own

one automobile and promote the use of lighter cars and motorcycles. I designed and built an electrically heated home with Urethane insulation cutting my power use. I practice recycling. I enter into planning and design to develop power from the sea and from the wind. I run and survey our rivers and get them protected and kept clean. Not much. But "action" is all that qualifies any of us.

And I built on a foothill out of Midway away from farmlands and flood planes.

ALTERNATIVE POWER RESOURCES TO FOSSIL FUELS

Alternative resource to fossil fuels have not been nearly adequately researched and developed as has been brought out. There is so much we have not thus done that we should be doing; that we are remiss if we do not do these things first. Not to mention the familiar ones such as nuclear and fusion fuels which have their own ecological and development hang-ups, geothermal, hydro-electric, liquid hydrogen steam, and several others. There is also power without measure in oceanic rivers, in the prevailing winds over high points. We must tap them. They are clean resources.

THINGS WE CAN DO TO CONTROL THE RATE OF USE OF FUEL AND POWER ...AND TO SLOW DOWN OUR NEED FOR OIL IN OIL SHALE:

1. Place an extra fifteen to twenty cent tax per gallon on gasoline and diesel fuels excepting mass transit and railroads. The tax to be used exclusively to help protect

1 and restore the environment -- which is our life, and to
2 research additional power resources. This will cut out
3 25% of the use of automobiles (for luxury), get half the
4 trucks off the highway and get freight and people back
5 on the railroads and into cooperative and mass transit.
6 MOST important - it will work. It will get environmental
7 efforts off from dead center and moving.

8 2. Recycling must be developed to its full potential
9 which is vast as a fuel mineral and oil resource, including
10 the processing of garbage.

11 3. Design and install high point prevailing wind
12 power generators and oceanic river power generators - designs
13 are on the board and they are competitive.

14 4. Re-educate people against using power as a fad
15 and to use power equipment only as a necessity to life.

16 5. Educate people to realize big cars make the roads
17 unsafe for little cars and motor bikes and waste fuel --
18 little cars are not basically unsafe. Or should we all be
19 driving Patton tanks? At two miles to the gallon.

20 TIME SCHEDULE OF SHALE OIL EXTRACTION AND INVESTING OUR MONEY

21 When reasonable efforts in the above are made and sustained
22 the need for larger scale extraction of oil from shale should
23 not be critical until 25 to 50 years from now. Research will
24 improve extraction techniques so far beyond present
25 capabilities, in respect to environmental protection and cost.

1 that it becomes ridiculous and tragic waste to invest heavily
2 in the present second, third or fourth best methods and plants
3 as compared to those we will produce in the future within
4 twenty years. The need is not that critical at the present
5 if the preceding steps are followed.

6 NATIONAL ENERGY POLICY needs to be developed and put into
7 action to guide and subsidize research and development, to
8 phase in and out the use of power resources, to reorder our
9 systems of transport, to reduce the use of power in homes
10 and offices with better insulation and less wasteful habits,
11 to schedule the development and use of each energy resource
12 so that its environmental impact is small enough to be
13 absorbed by the environment with some help from man without
14 permanent or serious harm to the environment and therefore
15 to man. National Energy Commission needs to set aside well
16 planned wildlife habitat areas from strip mining for coal or
17 oil shale.

18 MINING METHODS AND RESEARCH AND DEVELOPMENT

19 I would like to see research to perfect leaving the
20 shale where it is taken from -- or at least the same or
21 similar quantity. Even though it is expanded to twice its
22 size. And there must be a topsoil cover that is removed and
23 replaced where possible. I am sure some commercial uses can
24 be found which will alleviate the shale quantity. To wit,
25 insulation, cinder block like they use in Mexico with built-
in insulation just for a starter.

1 If small canyons are filled this promotes more wash
2 down of processed shale into lower farmlands, a disaster,
3 In situ procedures would reduce this with standard roll over
4 strip-mining procedures, including replanting. Mobile or
5 partially mobile plants, with smaller decentralized furnace
6 units need be developed for this purpose, for in situ is the
7 most efficient way of handling immense material quantities.
8 OIL SHALE AND FOSSIL RESOURCES MUST BE PRIMARILY RESERVED
9 TO INSURE LUBRICANTS AND PLASTICS RAW MATERIALS FOR MILLENIA
10 TO COME...We don't want to be remembered as the generation
11 that raped the resources of all future generations of time.

12 Thank you.

13 MR. DAY: Thank you very much, Mr. Jones.

14 I now call on a representative of the Utah Audubon
15 Society.

16 MR. LAMB: I am Harold Lamb, M.D., 1060 East First
17 South, Salt Lake City.

18 I speak with some hesitancy because of lack of
19 expertise on mining technology in reference to a project
20 such as this, but I have found that the material which is
21 presented is voluminous and I haven't read it all yet; and I
22 can't help but compare it to the Central Utah project, the
23 environmental draft that I read recently compared to that,
24 this is a master piece.

25 It seems to me too that the suggestion of pilot

1 programming is a good one rather than proceeding full speed
2 ahead with full development although I suspect this is a
3 matter of economics rather than a matter of concern about
4 environmental problems.

5 The message that seems to prevail throughout this
6 report, however, is the insatiable and urgent demand for
7 power. Even with full use of the resource this is only a
8 delaying action if basic reforms on demands are not brought
9 about in the near future.

10 The Utah Audubon Society agreed with assessment of
11 economic problems presented by the Club of Rome, British
12 investigators, Cal Tech scientists, and recently Verner Von
13 Braun and other astronauts and physicists. Even though
14 disagreement is proper and understandable the fact that such
15 a consortium of scientists are apprehensive about our course,
16 their assessment of the problem should be considered to be
17 at least a reasonable possibility.

18 With this in mind, the Utah Audubon Society believes
19 the report does not emphasize sufficiently the need for vastly
20 expanded and accelerated research and development of alterna-
21 tive sources such as hydro-dynamics, solar power, and so
22 forth. And we believe the energy crisis is so serious that
23 mobilization of skills, at least equivalent to the
24 Manhattan project, is required to develop energy producing
25 technology that minimizes environmental damage.

1 We talk a good deal about energy crisis but we aren't
2 acting like we have it, just increase production, and as
3 suggested perhaps in this document it is not a solution to
4 the problem, but perhaps even an acceleration of our present
5 disastrous course.

6 More specifically to the document, most of the
7 alternative sources of energy are dismissed on a basis of
8 lack of technology or inadequate lead time for development.
9 This is a legitimate comment, but we also do not have
10 successful techniques for land rehabilitation following
11 strip-mining. In the case of oil shale strip-mining or even
12 shaft mining there is a good case that the extent of land
13 damage is so great as to also deny its feasibility. Even in
14 the pilot projects the disposal of spent shale or fluff is
15 a major undertaking with estimates of over 1,000 acres per
16 year needed for disposal. This spent shale is also a
17 sterile material, and without added nutrients and water,
18 attempts at vegetation will undoubtedly fail.

19 In a land of already an adequate water supply, the
20 need for approximately 135,000 acre feet for the prototype
21 development would almost certainly require water from other
22 uses -- agriculture.

23 In the report we find a discussion of wildlife
24 resources which takes the usual tack: it ordinate importance
25 is placed on game species with almost total neglect of

1 non-game species.

2 There are an estimated 300 species of wildlife in the
3 involved area, but only a few are mentioned.

4 Reducing the demand for energy is discussed to some
5 degree particularly in the case of mass trans-systems as an
6 alternative priority of use, which is dismissed too easily;
7 and in an unconvincing fashion. Mass transit will work when
8 adequate funding and services are provided and if individual
9 choice of private transportation, at least in a commuter
10 role, is not permitted.

11 The use of atomic detonations to facilitate oil shale
12 production, in fact the acceleration of atomic power plant
13 once the problem of radioactive gaseous effluents and
14 adequate safeguards have been solved, or development of
15 techniques to accelerate degradation of waste products seems
16 to offer less obvious environmental harm than the present
17 proposals.

18 This is my verbal statement, and I will submit a
19 written statement in time.

20 MR. DAY: Is there a second representative from the
21 Society?

22 MR. LAMB: There was, but I don't see him here.

23 MR. DAY: I now call on Mrs. Nyla Kladder on behalf
24 of the Audubon Society of Western Colorado.

25 (No response.)

1 I now call on a representative of the Oil Shale
2 Corporation.

3 MR. YARDUMIAN: My name is Louis H. Yardumian, and
4 I am a Vice President of The Oil Shale Corporation, a
5 publicly held, private corporation. The company that I
6 represent, whose trade name TOSCO may be familiar to you,
7 is the owner and licensor of the TOSCO Process, a process
8 for the extraction of oil from oil shale. As a participant
9 in Colony Development Operation, TOSCO and its co-venturers
10 have conducted extensive field operations utilizing the
11 TOSCO Process, including the operation of a 1,000 ton per day
12 semi-works plant and mine at Parachute Creek. These activities
13 have demonstrated the feasibility of the process and
14 developed satisfactory solutions to environmental and other
15 related problems. That operating experience, which began
16 in 1964, and included the mining of more than one million
17 tons of ore by TOSCO and its partners, is the basis for my
18 remarks today.

19 Our company appeared earlier this week at the Denver
20 hearings, as did Colony Development Operation, and TOSCO and
21 Colony will be submitting detailed written comments.
22 Accordingly, my remarks here will be brief and principally
23 for the purpose of discussing one or two misconceptions about
24 the Prototype Leasing Program which have manifested themselves
25 at the earlier hearings and which may also arise here today.

1 We view the Draft Environmental Impact Statement
2 from the vantage point of a company that over many years has
3 carried out extensive work relating to both the technology
4 of oil shale extraction and environmental control measures.
5 We believe the Draft Statement, as well as the concept of
6 a test lease program to be major accomplishments. Indeed,
7 for the first time in our country's history, comprehensive
8 environmental guidelines are being established for the
9 development of a natural resource well in advance of
10 industrial commitment.

11 That the Department of the Interior has carefully
12 designated the program as prototype seems to be overlooked
13 by some. Yet it is clearly set forth as a limited program,
14 designed to test in field operations the technology of
15 recovering oil from oil shale, and, more importantly, to
16 determine the environmental effects of oil shale production
17 under carefully controlled and monitored conditions. It
18 will, therefore, produce operational data to be used in
19 determining the desirability of proceeding with an expanded
20 leasing program.

21 We believe that no more sensible approach could be
22 devised to provide answers to the many questions that have
23 been posed by industry, public interest groups, and the
24 Government concerning the environmental effects of such
25 development. The program, which will utilize less than one

1 half of one percent of the Federal oil shale lands in
2 Colorado, Utah and Wyoming, will be conducted under carefully
3 monitored regulations to define with certainty the environ-
4 mental effects of such development. It will assure compli-
5 ance with all existing and proposed environmental regulations
6 by both Federal and State Government.

7 We are confident that the successful completion of
8 this program will demonstrate that development of oil shale
9 can be performed in an acceptable environmental manner,
10 thereby making available large quantities of petroleum products.
11 Those petroleum products include low-sulfur fuels which are
12 essential to the improvement of air quality in our country
13 today.

14 I might add that in view of the mounting pressures
15 to provide for additional, secure supplies of petroleum, it
16 is important that we resolve the feasibility of recovering
17 this energy resource before we are faced with such urgency
18 that a crash program is inevitable. The U. S. economy is
19 heavily dependent on plentiful energy supplies. Sensible
20 environmental protection measures can be made a part of this
21 system. In this respect, the evolvement of the oil shale
22 leasing program will exemplify the accommodation of
23 environmental protection with resource development -- and
24 in the process, lay the groundwork for a much needed
25 contribution to our country's energy base.

1 As a final comment, I would offer the observation
2 that commercial-scale oil production will only come about in
3 a step by step fashion, thus affording substantial time
4 between plant startups to modify environmental programming.
5 Thus, a popular conception that a Federal leasing program,
6 together with development of private lands, would mean an
7 immediate one million barrel per day shale industry is
8 simply not the case. Commercial oil shale plants represent
9 sizeable investments of somewhere between \$250--\$400,000,000,
10 depending upon plant capacity. It is likely no more than
11 one or two plants will be started within the next few years.
12 That operating experience -- Technological, mechanical,
13 economical and environmental -- will be fully reviewed before
14 other plants begin. Thus, since the construction period alone
15 consumes two to four years, there will be ample opportunity
16 to re-evaluate environmental requirements.

17 In conclusion, I would like to express our thanks to
18 the Department of the Interior for this opportunity to appear.
19 The Oil Shale Corporation has, as a matter of policy, viewed
20 the solution of environmental problems as being no less
21 important than the solving of technical process problems.
22 We are committed to commercial oil shale development only
23 under environmentally acceptable conditions.

24 We congratulate the Department of the Interior on
25 the Draft Environmental Impact Statement. It is a thorough

1 and professional analysis. It provides a rational system
2 for the development of a new industry under controlled
3 conditions which will minimize undesirable environmental
4 consequences. The effort deserves our wholehearted support.

5 Thank you.

6 MR. DAY: Thank you very much.

7 Mr. Max D. Eliason.

8 MR. ELIASON: My name is Max D. Eliason. I am Vice
9 President, Director and Legal Counsel for Skyline Oil
10 Company, which is headquartered in Salt Lake City, Utah.

11 We are pleased to have this opportunity to comment
12 on the Draft Environmental Statement for the proposed
13 prototype oil shale leasing program. Our Company has taken
14 an active role in efforts to launch an oil shale industry
15 in this Country, and we are encouraged that the Federal
16 Government at long last is following a vigorous course to
17 insure the development of this valuable natural resource.

18 As an indication to you of Skyline's involvement and
19 interest in oil shale, it should be noted that Rulon K.
20 Neilson, the President of our Company, was one of the
21 original participants in the founding in 1955 of The Oil
22 Shale Corporation, commonly known as Tosco, and Skyline
23 itself was an early investor in that Company. We presently
24 own 773,330 shares of the outstanding stock of Tosco. Tosco
25 was established for the purpose of developing a process to

1 recover oil from oil shale rock and, along with its partners,
2 has now expended in excess of \$45 million in this endeavor.
3 It appears now that they have succeeded in perfecting their
4 process to the point of commerciability.

5 In addition to our commitment through Tosco, Skyline
6 owns in fee 16,154 acres of prime quality oil shale properties
7 located in Uintah County, Utah. For your information, we are
8 submitting for inclusion in the record a copy of our most
9 recent Annual Report which shows on page 8 thereof the
10 location of our properties. You will note therefrom, that
11 some of our lands are contiguous with the Federal tract
12 designated U-(b), which is proposed for offer for leasing under
13 the prototype leasing program. For this reason, Skyline is
14 quite familiar with the area around the two tracts which
15 would be offered for lease in Utah.

16 Skyline's oil shale reserves are presently subject
17 to leases granted to members of the Colony Development
18 Operation, namely: Atlantic Richfield Corporation, Sohio
19 Petroleum Company, The Oil Shale Corporation, and The Oil
20 Shale Corporation, and the Cleveland-Cliffs Iron Company.

21 As a representative of Skyline Oil Company, I have
22 been actively involved in oil shale matter through the Rocky
23 Mountain Oil and Gas Association (RMOGA), in which I have
24 served as Vice President for Utah and Idaho. I have served
25 as a charter member of The Oil Shale Committee of RMOGA

1 since it was first organized in the summer of 1963.
2 In 1966, the name of the Committee was changed to the Oil
3 Shale and Synthetic Fuels Committee, in recognition of the
4 fact that we, as a nation and as an oil industry, must
5 concern ourselves with the development of all of our
6 synthetic fuels, including oil shale.

7 As you are already aware, the Rocky Mountain Oil and
8 Gas Association has expressed at other hearings this week
9 its approval of the Draft Environmental Statement, and has
10 urged that it finally be adopted so that this vitally needed
11 leasing program can go forward.

12 Our Company is among those which applauded the
13 announcement several years ago of the new policy of the Fed-
14 eral Government to remove the 42-year moratorium on leasing
15 oil shale reserves on the public domain. Valuable time has
16 already been lost in implementing this policy, and we urge
17 that the prototype oil shale leasing program be inaugurated
18 without further delay.

19 We had high anticipations that this leasing program
20 would have been started in 1970, but it was postponed at the
21 last minute by the Secretary of the Interior who directed
22 that more study be given to environmental problems prior to
23 implementation of the program. In June of that year,
24 hearings on the program were held in each of the States of
25 Utah, Colorado and Wyoming.

1 At the Utah hearing, Skyline expressed strong
2 opposition to any further delay in moving forward with the
3 Federal oil shale leasing program. We pointed out then that
4 Tosco and other members of the Colony Development Operation
5 had been engaged since 1965 in studying the environmental
6 impact of an oil shale industry, and that many of the
7 environmental problems of this unborn industry already had
8 been identified and solved. We stated that further studies
9 of these problems could be made after an oil shale lease
10 sale was held, since there would still have been considerable
11 time needed to develop adequate technologies and to construct
12 commercial plants.

13 At that hearing, we voiced as forcefully as possible
14 our grave concern over the growing dependence of our Country
15 on imports of oil from foreign countries, many of which are
16 unfriendly to the United States. We cited the serious
17 problems confronting the development and marketing of the
18 North Slope oil and gas reserves, which still are in a
19 figurative deep freeze, and warned of the continued decline in
20 reserves of oil and gas in the contiguous 48 States. We
21 believed then, and we believe now, that immediate and
22 purposeful action must be taken to save the United States
23 from an energy-shortfall disaster.

24 Despite our urgings for immediate action, the
25 prototype leasing program remained in suspension pending

1 further studies. I served on the Utah Committee appointed
2 by Governor Rampton to prepare the report on Environmental
3 Problems of Oil Shale which was used by the Department in
4 compiling the Draft Environmental Statement. We, as a
5 Committee, worked diligently to identify all potential
6 problems which might arise from a commercial oil shale
7 operation, none of which appear to be insurmountable.

8 During the approximately two and one-half years since
9 the Secretary directed that further environmental studies
10 be made, considerable information has been obtained concerning
11 the environmental and other aspects of the proposed prototype
12 program, as is evidenced by the comprehensive three-volume
13 Draft Statement which we are considering at this hearing today.
14 We commend the Department of the Interior and all persons
15 responsible for the preparation of this Draft Statement,
16 which is very comprehensive and detailed.

17 In the interim, and while these studies have been
18 going on, the energy situation of the United States has
19 deteriorated dramatically. The shortage has become much
20 worse in that short period of time than anyone had predicted
21 and it appears to be getting more critical daily. Consequent-
22 ly, we reiterate our plea made in 1970 that this leasing
23 program be started immediately.

24 We should not wait until our energy shortage gets
25 even worse before we take steps towards an orderly

1 development of our oil shale reserves. Now we appear to
2 have time to conduct a prototype test leasing program for
3 oil shale which will help us to test the answers that have
4 been developed to environmental problems and make further
5 improvements, if necessary. If we wait any longer, we may
6 be forced into a crash program involving hasty and unwise
7 decisions. Then our environmental problems could become
8 much more severe.

9 One obvious conclusion which must be drawn from the
10 Draft Statement is that an oil shale industry will have a
11 noticeable impact on the environment. However, there are
12 no activities by men on this planet which do not have
13 environmental significance. Many of the effects from an
14 oil shale industry are very similar to those associated with
15 any large mining operation. Technologies already developed
16 and presently being employed by industry will do much to
17 mitigate the effects thereof, and further beneficial
18 technological breakthroughs can be expected.

19 One of the most serious obstacles to the development
20 of a fully mature oil shale industry is the availability of
21 adequate water supplies. The needs, however, still cannot
22 be fully assessed. The prototype test leasing program for
23 oil shale, as mentioned in the Draft Statement, "could provide
24 a body of hydrologic knowledge with which better water
25 utilization can be accomplished, and better pollution and

1 technical control measures established for the ultimate
2 development of the oil shale resource."

3 The States of Utah, Colorado and Wyoming are entitled
4 to their fair share of the water from the Colorado River
5 drainage system, but unless we start putting this water to
6 a beneficial use such as in the development of an oil shale
7 industry, we may lose our rights to this water forever.
8 This is another reason why time is of the essence in starting
9 on the Federal leasing program. The information to be
10 obtained from this prototype program is needed for future
11 planning.

12 The Draft Statement considers alternative sources
13 of energy which might be used in lieu of undertaking oil
14 shale development, such as increased oil imports, increased
15 domestic production, nuclear energy, and coal gasification
16 and liquefaction. It is important to realize that each
17 of these alternative sources of energy has its own peculiar
18 environmental impact problems. Thus, the decision to post-
19 pone oil shale development would not reduce environmental
20 problems; it would merely shift the stress on the
21 environmental to the alternate source of energy instead of
22 oil shale.

23 The United States is now at the point where we
24 cannot afford the luxury of choosing between different
25 alternative sources of energy; instead, we must utilize all

1 sources of supply in order to meet our needs, We must also
2 use wisdom in conserving our resources and in avoiding the
3 waste thereof.

4 Efforts have been made recently to undertake an
5 extensive project for the nuclear stimulation of tight
6 natural gas reservoirs on Federal lands in the Piceance
7 Creek Basin of Colorado, in the heart of the rich oil shale
8 deposits. Caution must be followed in approving any such
9 project which might impair the future flexibility to develop
10 the Federal oil shale reserves in the most efficient and
11 least wasteful manner. There are many tight natural gas
12 formations throughout the world where nuclear stimulation
13 projects can be undertaken, but this Country's prime oil shale
14 deposits are situated only in a very localized area.

15 The energy value of the natural gas which could be
16 obtained from a nuclear stimulation program in the Piceance
17 Creek Basin would be miniscule in comparison with the energy
18 value of the oil shale reserves under the same lands. It
19 does not appear sensible for the government to help sponsor
20 nuclear stimulation programs that could adversely affect the
21 value of Federal oil shale reserves in the richest oil shale
22 region in our Country.

23 The suggestion has been made that we reduce the
24 demand for energy in this Country. We agree that every effort
25 should be expended to educate the citizenry to conserve

1 energy. Such an educational program will be a long-range
2 endeavor, however, and can only hope to reduce but not
3 eliminate the shortage of energy which our Country now faces.
4 One of the best methods of educating the public to the need
5 to conserve energy as well as to develop additional supplies
6 to meet their needs is to allow the prices of energy products
7 to rise to a level commensurate with the costs of finding
8 and producing them plus a reasonable profit. The domestic
9 exploration for oil and gas has declined to less than one-
10 half of the level of 1956 as a result of increased costs
11 without compensating increases in prices. We trust that the
12 leaders and citizens of this nation will see the need for
13 such price adjustments and that these will be implemented
14 in the very near future.

15 The question which must be answered now is whether
16 the benefits to be derived from an oil shale industry more
17 than offset the adverse effects upon the environment which
18 will be caused thereby. We believe that the answer to this
19 question is clear, from a study of this draft environmental
20 statement and other considerations, and that such answer
21 is overwhelmingly in favor of moving ahead with this program.

22 Volume II of the Draft Statement contains an
23 excellent analysis of the alternatives available to us for
24 meeting our energy demands. We agree with the conclusion
25 found on page 206, therein, which is that "...in view of the

1 foregoing, it seems reasonable to postulate that for
2 some time to come the basic alternative to the production of
3 a million barrels of shale oil (per day) would be a million
4 barrels of imported petroleum."

5 This alternative of relying on imported petroleum
6 is totally unacceptable for the many reasons which are
7 discussed in detail in the Draft Environmental Statement. It
8 is shocking to witness the rapid acceleration in our
9 dependence on imported oil. In the October issue of the
10 Kiplinger magazine called Changing Times, it is pointed out
11 that in 1971 the United States consumed approximately 15
12 million barrels of oil per day and that by 1985 demand will
13 be about 27 million barrels of oil per day, with domestic
14 production then totaling about 10 million barrels a day.
15 Present projections, for just three years from now, or by
16 1975, call for importing approximately 39 per cent of our
17 oil.

18 The President has been forced during the last year
19 alone to increase dramatically the quotas for importation
20 of oil into this Country in order to meet demand. Within the
21 last month he authorized an increase in imports east of the
22 Rockies of 622,600 barrels per day during the last quarter
23 of 1972. This was the second major increase in the import
24 program this year. Levels east of the Rockies were boosted
25 230,000 barrels per day, or 15%, in May. This illustrates

1 the timeliness of the President's call in June of 1971 for
2 the Secretary of the Interior to initiate "a leasing program
3 to develop our vast oil shale resources, provided that
4 environmental questions can be satisfactorily resolved."

5 The excess production capacity of the U. S., which
6 the draft environmental statement claims will be exhausted
7 by 1973, has already disappeared. Oil wells in the Gulf
8 Coast region of the United States now are being produced
9 at 100 per cent of their allowables. The projections of
10 demand vs. supply as contained in Volume II of the Draft
11 Statement have already been outdated, and are too conservative.
12 If the United States were now to have a serious interruption
13 in its foreign supplies of petroleum, we could face gasoline
14 rationing here for the first time since the dark days of
15 World War II.

16 The Draft Statement observes that the one million
17 barrels of shale oil per day which might be in production
18 by 1985 will represent about a 10 per cent increase in the
19 amount of domestic production available in that year. This
20 would make the contribution from shale oil most significant.

21 There is also the possibility that our domestic
22 production in 1985 might be less than 10 million barrels per
23 day from conventional domestic oil and gas reserves. The
24 draw-down on domestic wells during the last two years has been
25 greater than anticipated, and the projection of our domestic

1 supplies may be overly optimistic. U. S. production capacity
2 for crude oil and lease condensate was estimated at 10,246,
3 000 barrels daily on January 1, 1972, a drop of 548,000
4 barrels per day from the previous January 1.

5 Great difficulties are being encountered by the oil
6 industry in trying to discover significant new oil and gas
7 reserves. The hazards and costs are extremely high, and it
8 may not be possible for our industry to replace the reserves
9 of oil and gas which we are consuming, let alone to add to the
10 rate of production from domestic oil and gas sources.

11 I might mention that our company is involved in the
12 conventional exploration for oil and gas.

13 In contrast to the undeveloped oil and gas deposits,
14 our oil shale reserves are already discovered, and their
15 magnitude and other characteristics are relatively easy to
16 measure. Their use is dependent solely upon a favorable
17 economic and political climate, plus the ability of private
18 industry to generate and attract the tremendous amounts of
19 capital which will be required.

20 Hopefully, the prototype oil shale leasing program
21 will help to prove quickly the viability of an oil shale
22 industry, and to put to rest the fears of many concerning
23 the reasonableness of its impact upon the environment. The
24 Federal government then could move forward rapidly with a
25 full-scale leasing program of its oil shale reserves. This

1 program could result in an increase in the projected one
2 million barrels per day of production for 1985, and much
3 larger volumes in the years thereafter. In the event the
4 prototype leasing program is successful, there is a possibil-
5 ity of an industry producing three or four million barrels
6 or more of shale oil per day.

7 If only the one million barrel per day goal is
8 reached by 1985, and if the shale oil is valued at \$5 per
9 barrel then, the daily product produced would be worth \$5
10 million dollars which otherwise would be paid to foreign
11 countries. This would result in a reduction in our annual
12 balance of payments deficit by \$1,825,000,000. This is a
13 goal well worth working towards.

14 While the Draft Environmental Statement discusses
15 the adverse effects on the environment from a commercial
16 oil shale industry, it does not dwell in any great detail
17 on some of the favorable impacts that the industry will have
18 on the environment.

19 One such benefit will be the decentralization of
20 population which will result. The regions of Utah, Colorado
21 and Wyoming in which the oil shale operations will be
22 concentrated are now remote areas with sparse populations.
23 The Draft Statement projects that there will be a mass
24 migration of large numbers of people into these areas as the
25 industry develops. Also, with better job availability, many

1 of the local people will not have to move elsewhere for
2 employment. This will help to relieve the congestion and
3 environmental problems of the larger cities where these
4 people would otherwise live and work.

5 One of the major challenges of our time is to find
6 sufficient money to carry on the programs needed to clean up
7 or maintain the quality of our environment. As an example,
8 our Governor and the Utah State legislature are concerned
9 about the pollution problems affecting Utah Lake, the Great
10 Salt Lake, and the Jordan River which connects these two
11 bodies of water. Governor Rampton, at a recent meeting of
12 the Legislative Council, urged that a Jordan River Parkway
13 project be inaugurated to purify this water and beautify the
14 banks along the River. He warned that millions of dollars
15 will be required to accomplish this, but that we must do it
16 despite the costs.

17 The beneficial effects of an oil shale industry on
18 the economy of this State can help to meet this and other
19 problems which we face.

20 The magnitude of the financial benefits of an oil
21 shale industry are illustrated on page III-76 of Volume I
22 of the Draft Statement where it states that an oil shale
23 industry producing just 400,000 barrels of shale oil per day
24 would generate total taxes and public revenues of \$300 million
25 per year. These would increase proportionately as the

1 industry grows.

2 As already noted, the oil shale industry will help
3 reduce the national balance of payments deficit, which
4 threatens to get completely out of control, thus having a
5 salutary effect on the health of the national economy. The
6 balance of payments deficit which will result from the
7 projected importation of up to 17 million barrels of oil
8 per day by 1985 is staggering to contemplate. At \$5 per
9 barrel, this will amount to over \$30 billion annually.
10 Consider how many of our great social programs, which are
11 geared to improve the standard of life of all Americans, will
12 have to be drastically curtailed and possibly eliminated if
13 we do not take constructive action now to reduce the magnitude
14 of our future energy imports.

15 For too long now we have been creating new jobs for
16 foreign peoples by purchasing their goods instead of American
17 products. Our unemployment rate has been at intolerable levels
18 and the welfare rolls are swelling. Here is a chance for us
19 to develop a new industry in our country which will help the
20 unemployment problem. When one considers the destructive
21 influence on individual lives of unemployment and welfare
22 reliance, the creation of new jobs by this entirely new
23 industry is most important. We submit that the employment
24 level in this Country is also a part of our total environment.
25 Utah's economy has become overly dependent in recent

1 years on governmental and defense-related jobs. Our
2 Governor and others have expended great efforts to encourage
3 more industry to move into our State, but still this over-
4 dependence persists. The new oil shale industry can help.

5 The United States has been greatly blessed with
6 abundant energy resources. As Assistant Secretary of the
7 Interior Hollis Dole said in Dallas, Texas, last week, the
8 United States has "all the energy resources we need to give
9 us any degree of self sufficiency we desire to maintain."
10 Let us exercise our ingenuity in the utilization of these
11 resources.

12 The Draft Statement could be studied profitably by
13 every adult citizen of the United States, since the quality
14 of life for each of us is directly dependent upon how
15 effectively we handle the energy crisis facing our nation.
16 All Americans should allow the slogan adopted by the oil
17 companies of America last year to be indelibly imprinted upon
18 their minds, while making the critical decisions which lie
19 ahead. That slogan is:

20 A Country that runs on oil can't afford to run short.

21 With that slogan in mind, we call upon the Secretary
22 of the Interior to issue the final draft of the Environmental
23 Statement and to set an early date for the oil shale lease
24 sales. Hopefully, the inauguration of an oil shale industry
25 will help insure that our present energy crisis does not turn

1 into an energy disaster.

2 Thank you.

3 MR. DAY: Give me the title of that document.

4 MR. ELIASON: The Annual Report of Skyline Oil
5 Company ended fiscal year May 31, 1972.

6 MR. DAY: Mark that Salt Lake City Exhibit No. 1.

7 (Salt Lake City Exhibit No. 1 was
8 marked for identification.)

9 MR. ELIASON: I would like to have my entire statement
10 entered into the record.

11 MR. DAY: All right. That will be marked Salt Lake
12 City Exhibit No. 2.

13 (Salt Lake City Exhibit No. 2 was
14 marked for identification.)

15 MR. DAY: You testified that Skyline has approximately
16 16,000 acres of oil shale lands and Tosco has many thousands
17 of oil shale acres. The question then is why is it necessary
18 that the Federal government issue you oil shale lands if you
19 already have them?

20 MR. ELIASON: It is true that we have 16,000 acres of
21 land.

22 I might explain that these lands are under lease to
23 a colony group of companies and it is expected that some of
24 these will be developed by private industry.

25 There are two basic reasons why it is important for

1 this leasing program to go forward.

2 The first of these is that there are just very few
3 companies that have significant oil shale lands which seem
4 to be amenable to the development in the early stages. That
5 means, as pointed out, and I can't point to the exact place
6 in the statement, but it brings out in there that there are
7 many companies that are effectively cut out of the oil shale
8 development; they don't have an incentive at this point to
9 even work on technology because if they develop the
10 technology they wouldn't have lands to utilize them on.
11 So the reason for this is to make more lands available
12 and so that no company gets a corner on the market on the
13 technology; also to spur the competitive nature of the
14 industry.

15 The second reason why it is important for the Federal
16 government to move forward with this prototype leasing program
17 is to give the Federal government its many answers. Many
18 answers, for instance, meaning as to whether or not the
19 lease provisions are adequate, whether the royalties are
20 adequate. To get the experience in the department of
21 administering the Federal lands.

22 As you are aware, the Federal government owns over
23 80 per cent of the oil shale reserve and about 70 per cent
24 of the total lands.

25 This is a great resource for our country and can

1 bring a lot of money into our national life through the
2 royalties and otherwise.

3 Those are the two basic reasons as we see it.

4 MR. DAY: Thank you.

5 That completes our list of scheduled witnesses.

6 Are there any others present that desire to make a
7 statement? If so, please step forward.

8 MR. MORGAN: My name is John Morgan, Jr. My address
9 is 709 Walker Bank Building, Salt Lake City, Utah.

10 Gentlemen, I appreciate this opportunity to appear
11 here today, and I represent the Utah Resources International
12 Company of which I am President.

13 This company has imported oil shale royalty interest
14 under the Utah state leases owned by Shell Oil Company, Pam
15 American Petroleum Corporation which is AMCO Production
16 Company, and Husky Oil Company in excess of 43,000 acres
17 located in the oil shale reserves of the Uintah Basin in the
18 eastern part of the state of Utah.

19 May I at the outset of this hearing extend my
20 appreciation for the opportunity of appearing at this hearing
21 to discuss the environmental draft of the proposed leasing
22 act to the Department of the Interior. May I also offer
23 sincere congratulations to the Department of the Interior
24 officials for the objectivity in recognizing the great
25 emergency in environmental problems and challenges before

1 our country today and our attempt to find the answers to
2 these problems and challenges by seeking these suggestions
3 and advice and support of private enterprise and the states
4 of Utah, Wyoming and Colorado and other interested individuals
5 as well as utilizing the very great talent and background of
6 the personnel of the Department of the Interior itself.

7 For our own part, we are convinced that our country
8 must find the answers to this growing energy crisis which is
9 before us today. Our energy requirements are so great even
10 at this point, and our projected energy requirements in the
11 years to come are so fantastic that it almost overwhelms us
12 to contemplate oil and gas supplies in order to meet these
13 requirements.

14 In California alone, for example, there will be in
15 1975 a 2.2 billion cubic feet of gas per day deficit, shortage.
16 This was testified to by Mr. Howard Boyd, who is the Chairman
17 of the Board of El Paso Natural Gas Company. El Paso, for
18 instance, must find this kind of gas supply in order to
19 meet this huge and growing deficit.

20 We can buy all this oil and gas -- if this would be
21 our policy -- from the Middle East and African countries,
22 then we know this will ruin our balance of payment deficits
23 and once these countries get us in a position where we must
24 depend upon them, they can then raise the price at any time
25 they desire and we will have to meet that price or it may be

1 that they could cut us off.

2 In any event, because it is true that there is a
3 growing Russian influence in the Middle East, for instance,
4 as it is growing every day so in the time of national
5 emergency, we could not depend on the Middle East countries
6 for our own supplies.

7 Max Eliason gave an excellent report on this, and I
8 feel it should be sustained.

9 This makes it so important that we propose very
10 definite plans for building a great oil shale industry
11 right in our own backyard where we have the vast reserves of
12 oil shale, in Utah, Wyoming and Colorado.

13 Part of this program has to do with water resources
14 which we have and this was also referred to by Max Eliason.
15 If we let the water resources go without utilizing them then
16 we in effect abandon those resources. We must put them into
17 productive and beneficial use, and this is why we have
18 applied in connection with the lands that we have, state land
19 in the state of Utah, and we have applied for sufficient water
20 rights to accommodate an oil shale industry in our state.

21 I am also submitting a map (the map was not submitted
22 to the reporter at the hearing) with my statement which shows,
23 for example, that there are more than 600 billion cubic feet
24 of oil in reserves in oil shale in the Uintah. These come
25 from oil holes drilled by the oil companies and reported to

1 the Geological Survey, Bureau of Mines.

2 I have another map which shows the equivalent amount
3 of gas which can be recovered from the oil shale, pipeline
4 gas.

5 These hydrocarbons can be recovered, you know, with
6 certain techniques which we are in the process of developing
7 into regular oil and gas reserves.

8 There is as much as 3 billion cubic feet of pipeline
9 gas to the square mile, according to this information that
10 we have received, and it can be converted to pipeline gas.
11 There is this kind of reserve in the ground in oil shale.

12 These figures have been arrived at through studies
13 which we have employed at the Institute of Gas Technology
14 and in cooperation with the Bureau of Mines and the private
15 industry reports through drilling and so forth. You can see
16 the fantastic potential lying in the ground, lying idle.
17 There is a fantastic reserve of oil and gas contained in the
18 oil shale.

19 We believe there is one real way that recovering these
20 reserves can be accomplished and this is by a great
21 cooperative effort involving the State of Utah, the Federal
22 government, and free enterprise all working in a cooperative
23 way to develop this great industry.

24 We have heard from some representatives of free
25 enterprise this morning, but you know there is so much more

1 from free enterprise that could be heard. We haven't heard
2 from the oil industry this morning, really, and this is who
3 we should be hearing from.

4 I am convinced if we don't get the oil industry
5 behind this, I don't think it will go far. It takes a great
6 effort with free enterprise the State and Federal government
7 in order for this to go forward.

8 This very hearing today that you gentlemen are here
9 for is a great example of Federal government showing its
10 desire and effort and energy in doing its part. We are
11 convinced that the very best way to meet the environmental
12 problems which are inherent in the production of a million
13 barrels of oil a day where we have set as an example, for
14 instance, a goal of 2 billion cubic feet a day to meet this
15 huge demand that we developed, and the in situ process
16 recovery program where we can convert the oil and gas
17 contained in the oil shale to regular liquid oil and vaporous
18 gas in places. And, you see, that would go so far in
19 helping to eliminate our environmental problems which you get
20 in such huge amounts if you merely conduct an operation on
21 the surface of the land.

22 Now, we have been working very hard on the patent to
23 accomplish this purpose and we are working with the best
24 oil companies in America, as I mentioned, to accomplish this
25 objective. We believe it is clearly a possibility. We also

1 believe that this possibility can be accomplished to secure
2 this kind of industry by 1985.

3 I might say that we were involved in a law suit with
4 United States Supreme Court and we lost in the Supreme Court;
5 however, if we won, we ourselves believe that it would have
6 been a great step forward in the way of developing an oil
7 shale industry.

8 We also believe the concept of our proposal is an
9 excellent one. We have the State lands scattered throughout
10 the Federal lands and our idea from the beginning is to
11 invite leasing of Federal lands to surround the State leases
12 and put them together in a total block of some 40,000 acres
13 in a unit and this will give the operating company sufficient
14 land to really project their sites in a total industry.

15 With Shell Oil Company land, for instance, and the
16 AMCO and Husky land located in proximity to each other and
17 then if the Federal leases were issued in this area and you
18 could then bring other oil companies in, which will have to
19 take if you are going to get the investment, to accomplish
20 this kind of industry. This would be the realistic way to
21 approach this thing in our judgment. But we believe it must
22 take some financing on the part of the Federal government.
23 In our judgment it can't, on the one hand, be done by private
24 industry. This is too huge and undertaking. We believe
25 the Federal government has a role to play here and a formula

1 must be worked out so the Federal government whose
2 responsibility is to make certain we have sufficient energy
3 in this country to get our energy needs and then we must
4 always have some responsibility of this kind to the industry
5 to help it get off the ground.

6 This is my statement, and I want to thank you
7 gentlemen for the opportunity of appearing before you.

8 MR. STONE: Mr. Morgan, the proposed action of your
9 company in which you had an adverse ruling, could you give
10 us a brief description of that?

11 MR. MORGAN: Well, you see, our thought was if we are
12 really going to develop an oil shale industry we can't do so
13 because of conflicts with oil and gas. Most of our oil shale
14 is located in the ground and when we go down there to work
15 an in situ program for the recovery of oil from the shale,
16 we run into conflicts with oil and gas leaseholders which
17 we think we should work toward developing a lease including
18 all oil and gas no matter how recovered and the Supreme Court
19 -- well, we got legislation through the legislature which we
20 thought would bring this about but nevertheless the Supreme
21 Court held, no, that wasn't the situation. There are two
22 separate things and they should be separated. But we went
23 to the Supreme Court and that's as far as you can go.

24 MR. DAY: You will present the two maps to the
25 reporter and they will be Salt Lake Exhibits No. 3 and No. 4.

(Salt Lake City Exhibits No. 3 and No.
4 were marked for identification.)

Is there anyone else desiring to make a statement?

MR. FEIGHT: Cleon Feight, commonly pronounced
"clean seat" by those in the oil and gas industry.

We would like to submit for the record some rules
and regulations adopted by the Board on September 20,
concerning the reclamation of oil shale and the Fortuma
sandstone. I will put these in.

MR. DAY: That will be Salt Lake City Exhibit No. 5.

(Salt Lake City Exhibit No. 5 was
marked for identification.)

MR. FEIGHT: We are of the opinion that this can be
accomplished without a bad effect on the environment by
proper regulation. We would like to support the statement
made by Senator Bennett, Allen, Max Eliason and others in
favor of leasing the vital natural resources.

I would like to make one short observation. I
notice that you started out in Rock Springs and went to
Cheyenne. My only regret is that you couldn't go to Casper
where the wildlife people would have you believe that the
mining activities will have a tremendous effect on the
animal population of these areas. I recently made a trip
into Casper and Rock Springs, and I never have seen so many
antelope in my life. They were right on the side of the road

1 watching the cars go by. Everytime we make a trip up to
2 the Book Cliffs, the Kisco area where we have to chase deer
3 off the road. The animals don't enjoy scraping their hides
4 off, and they take the trails that man provides for them.

5 My last statement is that I think not only the people
6 are overrunning Yellowstone Park, but the bears and animals
7 are doing the same, and I don't know who is afraid, the bears
8 or the people.

9 (Much laughter.)

10 Thank you.

11 MR. DAY: Is there anyone else present that desires
12 to make a statement?

13 MR. RITZMA: Howard R. Ritzma, Petroleum Geologists
14 with Utah Geological Survey and Chairman of the Committee of
15 Environmental Problems for the State of Utah. I presented
16 this statement yesterday in Vernal, Utah, and I will not
17 repeat it at this time but copies are available for those
18 who wish to take a copy.

19 This report was a progress report by the Committee
20 on Environmental Problems of Oil Shale.

21 Item No. 2 is a status of State regulations governing
22 production of oil from oil shale and oil - impregnated sand-
23 stone, and this matter has been covered very well by Cleon
24 Feight this morning who placed those regulations in the record.
25 The status of the Utah planned selection in the oil shale

1 region covered by other state officials this morning, and
2 probable environmental studies in Utah's oil shale region,
3 which was point number 5 of the testimony presented yesterday,
4 and I would like to add that the likelihood that these studies
5 could begin in 1972 or 1973 under the auspices of the
6 University of Utah have been somewhat dimmed by the recent
7 death of the Director of Engineering, but however, the
8 actual status is not known at the present time.

9 I believe that covers all the points in this report
10 along with the testimony which was presented yesterday.

11 Thank you.

12 MR. DAY: Thank you.

13 Is there anyone else that desires to make a statement?

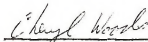
14 (No response.)

15 I would like to remind everyone that written state-
16 ments from those unable to attend the hearings should be
17 received by the Director, Office of Hearings and Appeals
18 on or before November 7. That has been extended with the
19 appropriate notice published in the Federal Register.

20 Thank you very much. The meeting is adjourned.

21 (Whereupon, at 11:10 o'clock a.m. the hearing was
22 adjourned.)
23
24
25

1 "This is to certify that the attached proceedings
2 before the Department of the Interior in the matter of
3 the Oil Shale Leasing Program, Salt Lake City, Utah,
4 October 13, 1972, were held as herein appears, and that
5 this is the original transcript thereof for the files of
6 the Department.

7
8 

9 Cheryl Woods,
10 Official Reporter
11 FEDERAL REPORTING SERVICE
12 991 URSULA ST.,
13 DENVER, COLORADO 80011
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1 UNITED STATES OF AMERICA
2 DEPARTMENT OF THE INTERIOR

3
4 - - - - -x
5 In the Matter of: :
6 DRAFT ENVIRONMENTAL STATEMENT :
7 FOR THE PROTOTYPE OIL SHALE :
8 LEASING PROGRAM. :
-x

REPORTER'S TRANSCRIPT

9 City Hall Auditorium
10 Fifth and Rood Streets
11 Grand Junction, Colorado
Friday, October 13, 1972

12 PURSUANT TO NOTICE, the above-entitled matter came on
13 for hearing at the hour of 9:30 o'clock a.m., this date,
14 before JOHN R. RAMPTON, JR., Administrative Law Judge.

15 PANEL MEMBERS:

16 HENRY ASH, Oil Shale Field Coordinator, Bureau of
17 Land Management, Denver, Colorado.

18 STEVE UTTER, Bureau of Mines, Denver, Colorado.

19 HAROLD BOEKER, Bureau of Sport Fisheries and Wild-
20 life, Albuquerque, New Mexico.

21 JOHN DONNELL, U. S. Geological Survey, Denver,
22 Colorado.

I N D E X

<u>NAME:</u>	<u>PAGE NO.</u>
R. W. Buchwald, Jr. (Sun Oil Company)	6
Frank Cooley (Oil Shale Planning Commission)	11
John R. Moran, Jr. (American Petrofina)	17
Russell J. Cameron (Cameron Engineers, Inc.)	25
Mrs. J. W. Rogers (Aspen Wilderness Workshop)	33
Bill Brennan (Rio Blanco County Commissioners)	35
Tam Scott (Colorado Rivers Council)	38
Norman Allen (Colorado Sportsmen's Assn.)	46
Mrs. Diana Smith (Individual)	52
Ms. Joan Nice (Roaring Fork Committee, Sierra Club)	58
James H. Smith, Jr. (Individual)	61
Roland Fischer (Colorado River Water Conservation District)	72
Dr. Gerald P. Wood (Colorado Department of Health)	79
Mr. Ron Gitchell (Meeker Town Council)	83
Ms. Nyla Kladder (Audubon Society of Western Colorado)	95
Bob Chancellor (Individual)	101
Pat Halligan (Oil Planning Commission)	105
Jack Roadifer (Individual)	109

P R O C E E D I N G S

JUDGE RAMPTON: This hearing will come to order.

My name is John R. Rampton, Jr. I'm with the Office of Hearings and Appeals of the Department of Interior. I've been asked to conduct this hearing.

Those on the panel with me this morning, proceeding from my left, are Henry Ash --he's the oil shale field coordinator, Department of the Interior; John Donnell, U. S. Geological Survey; Harold Boeker, Bureau of Sport Fisheries and Wildlife; and Steve Utter, Bureau of Mines.

The purpose of this hearing is to receive comments on the Draft Environmental Statement for the proposed prototype oil shale leasing program, pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969.

In accordance with the provisions of the National Environmental Policy Act of 1969, the Draft Environmental Statement was made available to the council on environmental quality on September 6th, 1972, and a notice of availability published in the Federal Register on September 7, 1972.

The Office of Hearings and Appeals, published a notice of public hearing on the Draft Environmental Statement in the Federal Register on September 7, 1972, scheduling the hearing in Grand Junction for today at 9:30. Those wishing to appear were advised to contact the Director, James M. Day, Office of Hearings and Appeals, in Arlington, Virginia.

1 An official reporter will make a verbatim transcript of
2 the hearing. All matters spoken while the hearing is in
3 session will be recorded by the Reporter. So that there will
4 be an accurate and complete record of the hearing, it is
5 essential that only one person speak at a time. While the
6 hearing is in session no one will be recognized to speak
7 other than the parties who wish to present a statement.

8 I'd like to make it clear that this is not an adversary
9 proceeding. The participants presenting their views will not
10 be sworn nor placed under oath. There will be no examination
11 or interrogation of the witnesses except by panel members,
12 and that only for clarification. The participants will be
13 called in the order shown on the list that I have here.

14 Now, if there is anyone not on this list when we finish
15 with those speakers who have already registered, I will ask
16 for a show if there's anyone who wishes to speak, and I think
17 we'll have plenty of time. I am not going to make a strict
18 limitation of time for each speaker to present their case,
19 however, if it becomes necessary, I will indicate that you're
20 taking too much time and ask that you present what other
21 matters that you may have in written form.

22 I would like to express two points. The presentation
23 to be relevant and supported by pertinent data. If any
24 comment is directed to the Draft Environmental Statement,
25 refer to the applicable pages of that Statement. And if

1 information is quoted from technical or scientific journals,
2 or any other publications, please give the name, the author,
3 and the page number and the date on that publication.

4 At the conclusion of the oral statements the participants
5 may submit written statements. The statements will be marked
6 as Exhibits. I don't wish to receive, however, the written
7 statements if they are duplicates of the statements you make
8 orally.

9 It would be helpful to the Reporter if we could obtain
10 copies of prepared statements, so when you approach the stand
11 if you have a copy of your prepared statement, would you give
12 it, please, to the Reporter? And if you have an extra copy,
13 she'll, I think, appreciate having those copies when she
14 prepares this transcript.

15 Written comments from those unable to attend and from
16 those wishing to supplement their oral presentation at the
17 hearing should be received by the Director, Office of Hearings
18 and Appeals, at the address previously stated on or before
19 October 23, 1972, for inclusion into the record.

20 A transcript of this hearing will be prepared and the
21 Final Environmental Statements will reflect the comments of
22 this hearing, where appropriate. The record will be available
23 for public inspection at the Office of the Oil Shale Coordinator,
24 United States Department of the Interior, Room 700 Interior
25 Building, and the Office of the Director, Office of Appeals

1 and Hearings, 4015 Wilson Boulevard, Arlington, Virginia.
2 Copies of the transcript may be obtained by making arrangements
3 with the Reporter. Copies of all written statements can be
4 obtained by making appropriate appeal to the Office of Hearings
5 and Appeals.

6 The Director has asked me to express his personal thanks
7 for the time in this hearing spent by people who have been
8 involved and will become involved and the members of the
9 panel. All of the comments will be carefully considered by
10 the Bureau in accordance with the applicable provisions of
11 the National Environmental Policy Act of 1969.

12 I would also add that if there's anyone present who
13 has not registered in the lobby or the foyer, would you do
14 so before you leave, please?

15 We'll call the first participant on the list, the
16 representative of Sun Oil Company of Dallas, Texas.

17 MR. BUCHWALD: Mr. Chairman, panel, ladies and
18 gentlemen. I am R. W. Buchwald, Jr, Manager of Recovery Research.
19 I came to Grand Junction to comment, for Sun Oil Company, on
20 the Draft Environmental Statement for the proposed prototype
21 oil shale program.

22 My comments today are, for the most part, a reiteration
23 of the statement our president, Mr. R. E. Foss, made on
24 October the 10th on the Denver hearings.

25 The three-volume draft has been analyzed by Sun
staff personnel who have been working on the oil shale study.

1 This statement today gives briefly the views and position of
2 Sun management, based upon that analysis.

3 We request permission to file a more detailed
4 statement, with references to pages, and with suggestions for
5 changes in language, before the record closes in order that
6 the more detailed suggestions be included as a supplement to
7 this statement.

8 First, we would like to acknowledge the impressive
9 and expensive research that went into preparation of the
10 Draft. The people in Interior whose work and expertise went
11 into compiling the impressive statement certainly are to be
12 complimented.

13 Secondly, I assure you that Sun Oil Company supports
14 the premise that a prototype program affords the best hope
15 for achieving the goal of providing for the United States
16 this new source of energy in a time frame that is early
17 enough to be of benefit with a commercial technology which
18 will permit the development of private enterprise in a manner
19 which will afford a minimum impact on our environment.

20 Sun Oil Company recognizes its environmental
21 responsibilities and has no quarrel with the pure environmental
22 conclusions of this Draft Statement. We are actively evaluating
23 our participation in the proposed program.

24 As a responsible member of many communities in which
25 we operate, Sun Oil Company constantly strives to conduct its

1 activities with concern for the rights and well-being of
2 others, including its neighbors and all citizens. Our potential
3 participation will be in keeping with our ruling -- not only
4 to comply with all air and water pollution and land use laws
5 and regulations, but also to adopt every reasonable measure
6 for the protection and conservation of air, water, and land
7 resources in the production and processing, and marketing of
8 all of our products.

9 However, we must point out our serious doubt that
10 the environmental impact statement, the true economic
11 perspective when they touch upon prices and rates of return
12 and upon expenditures for investments and operating costs,
13 which will include items for conservation and reasonable land
14 restoration.

15 For example, in Volume I under the captions "Environ-
16 mental Impact," there is a discussion which includes statements
17 that: A minimum -sized complex would produce 50,000 barrels
18 a day or possibly as high as 100,000 barrels a day. The
19 capital investment required would be from \$250- to \$500-million.
20 a rate of return of 10 to 13 percent is anticipated. Calculations
21 are based on an assumed oil price of \$3.90 per barrel.

22 Not only must economic factors be considered, but
23 also be realistic in our considerations. There must be a
24 balancing of such considerations as the revenues from the oil,
25 the rate of shale to be processed, and the extent of land

1 restoration required. Sun has had a pretty thorough introduction
2 into the problems of recovering oil from tar sands, and we
3 believe that experience is useful here.

4 On the basis of that experience we have reached
5 these conclusions: A facility capable of recovering 50,000
6 barrels of oil per day from the shale would be tremendous
7 earth handling operation. Such an operation could be called
8 minimum only in the sense that nothing smaller would have
9 much chance of being considered commercial.

10 A range of \$250 to \$50-million is an extremely soft
11 estimate. On the basis of track records, it is safe to say
12 that such estimates of capital requirements usually prove to
13 be on the low side.

14 As indicated in the Environmental Statement, a 10
15 to 13 percent rate of return would be acceptable, but investors
16 supplying the \$250- to \$500-million of capital would need some
17 assurance that such a rate is attainable after allowing for
18 the unforeseen costs associated with developing a new process.
19 It must be remembered that the investors in this prototype
20 program cannot rely upon recoupment out of future plans or
21 leases. The prototype investors have no assurance they will
22 ever get another oil shale track.

23 No basis is suggested for the assumption of an
24 oil price \$3.90. It is not clear from the Environmental
25 Statement what this price is expressed in terms of today's

1 dollars or future dollars. The oil that will be produced
2 and sold from shale is many years down the road. We are not
3 prepared to guess what the price of oil or the value of oil
4 will be at that point in the future. It is our opinion that
5 the prototype programs would not be commercial unless more
6 revenues are generated for the programs than would be derived
7 from the sale of oil at \$3.90 per barrel in terms of today's
8 dollars.

9 We note that Volume II devotes considerable space
10 to the relation of oil imports to the future of oil shale.
11 There can be no question about there interdependence. Further-
12 more, for the short term there seems to be no choice than to
13 utilize foreign oil to make up the deficiency between domestic
14 demand and supply.

15 The danger is in allowing our future dependence on
16 foreign oil to reach unacceptable levels -- certainly not the
17 levels of over 40 percent in 1985 as projected in Volume II.
18 We simply must find the best way to make imports work for the
19 solution of this nation's energy crisis.

20 We were gratified to find in Volume III a recognition
21 that the lease bonus itself constitutes an undesirable economic
22 burden on the development. While spreading of the bonus over
23 several years will help, the fact remains that capital paid
24 out for bonus still is capital not devoted to developing the
25 prototype programs. I don't know what the Government might

1 be required to do with this bonus money, but certainly a
2 logical use would be to find a way to plow it back into the
3 shale oil program.

4 In his connection, Interior's mention of possibly
5 crediting extraordinary environmental costs against royalties
6 against these prototype programs is a step in the right
7 direction. Certainly there are other powers which the
8 Secretary has under existing law, or might obtain under future
9 law, to assure the progress of the needs but very expensive
10 oil shale prototype programs. We believe the welfare of the
11 nation requires it.

12 Thank you for the opportunity to express Sun Oil
13 Company's views on this important matter. Copies of our
14 statement are on the table at the rear of the auditorium.

15 JUDGE RAMPTON: Mr. Frank Cooley.

16 MR. COOLEY: Mr. Chairman, members of the panel,
17 ladies and gentlemen. My name is Frank Cooley. I live in
18 Meeker, Colorado. At the present time I am chairman of the
19 Oil Shale Regional Planning Commission. This Commission is
20 headquartered in the Rifle, Colorado, and comprises the three
21 counties of western Colorado containing the oil shale deposits
22 of the Green River formation -- Mesa County, Garfield County
23 and Rio Blanco County.

24 The Planning Commission was organized a year ago
25

1 to coordinate the efforts of the three counties, to provide
2 a clearing house of information about development in the three
3 counties, and to assist the counties in their planning efforts.

4 The Oil Shale Regional Commission is charged with
5 the responsibility of one of the four studies taken jointly
6 by industry, the Federal Government, and the State of Colorado,
7 a study into regional development and land use. This work is
8 progressing under the three contractors who are professionally
9 competent and capable of developing information and data
10 necessary for local government to make proper decisions. The
11 study will be completed in 1973.

12 Each of the counties has a planning commission. In
13 addition, the principal towns of the three counties have
14 active planning commissions. Mesa County has a particularly
15 active and well-staffed city/county planning commission. The
16 resources of the agencies are each limited and the pressures
17 are increasing rapidly as a result of building of Interstate 70
18 and of the boom in recreation land in Western Colorado. The
19 economies of the three counties have not been dynamic. In
20 recent years the characteristic of towns in Western Colorado
21 is the loss of population.

22 At this point, let us turn to Genesis I-III-85, and
23 if I just may read a paragraph. "The inadequacy of housing
24 during the construction period especially may result in
25 additional detrimental effects. The first effect would be

1 overcrowding of existing facilities, possibly creating health
2 and safety hazards. Secondly, disproportionately high rents
3 may also occur. This could affect the worker turnover rate.
4 It is also expected that many of the workers, both construction
5 and production, will bring mobile homes into the area. This
6 could result in 'shanty town' type developments; however, the
7 regulations, the planning commission have established will
8 probably avert this development." It was scary there for a
9 minute.

10 Many of the burdens of an oil shale development
11 will fall upon the local governments. We hoped and still do
12 hope that by coordinating the efforts of the local governments,
13 by study and planning, that we may be ready in some measure
14 to control the development of the land and to control some of
15 the impact and industry on the local environment and our way
16 of life.

17 While progres is being made, the size of the task,
18 the pressures of time, and the limitations on the ability of
19 local government adequately to protect Western Colorado are
20 now causing us concern. We have real fear that we may not
21 exercise the degree and maturity of effective local control
22 that is essential if we are to have development on the scale
23 planned.

24 The problem which is of the greatest concern to me
25 is the apparently limited ability and the slow pace of local

1 government to deal with rapid expansion and development and
2 with the large pressures of people and money that are arising
3 in Western Colorado -- even absent the pressures which would
4 be or are being created by the leasing program. That is to
5 say, we have problems this minute, prior to any oil shale
6 developments that are taxing our abilities and our resources.
7 Specifically, the one impact of which I have greatest fears,
8 and one that is not dealt with at all in the Draft Statement,
9 housing in the area. Today there is safeguards with respect
10 to water pollution, air pollution, and the impact of an
11 extractive industry upon the public domain. There are studies
12 underway on the eco systems, on the bird life -- the hump-backed
13 chub -- and on the fishing in the Piceance Basin. At this
14 particular time the impact which seems most fearsome to me is
15 not the impact on air or water or on the fishing or hunting
16 or wildlife, but the impact on the way of life in these
17 communities. The housing particularly presents to me greater
18 problems than any others facing the people in this generally
19 sparsely populated region. If the corollary of the leasing
20 program is the inevitable importation of 10,000 house trailers,
21 then I fear that the quality of life in this part of the
22 state will be destroyed.

23 I believe that there has been a tacit assumption
24 on the part of the Interior Department -- and, of course,
25

1 this statement on Page 85 -- but the activity of the regional
2 planning commission and the counties would be of sufficient
3 vigor and quality that these problems are being solved on the
4 local level.

5 I hope that they can be, but there is no assurance
6 of this today. Pressure has been brought on Garfield County,
7 for example, to proceed with the utmost hast to complete the
8 zoning of all of western Garfield County which lies along the
9 Colorado River. After the delay of more than a year, the
10 zoning has not been done but the pressures and the dangers
11 are extreme and the resources are limited. The situation with
12 respect to mobile homes in Uintah County, Utah, where the
13 commissioners got up to a count of 700 and then stopped
14 counting, is an example of the problem. They, of course,
15 have an oil boom going on over there which is independent of
16 the development that is now going on, and each week the
17 problem is bigger.

18 One of the most unfortunate limitations in the
19 fact that people in this area have been promised an oil shale
20 boom by next month for the past 54 years, and they have become
21 callus to each new increasing wave, just as they are somewhat
22 skeptical of the question of whether the leasing program or
23 the activities of the Colony, for example, will trigger a
24 full-blown industry.

1 In my judgment the Draft Environmental Impact
2 Statement has been thoughtfully prepared with a great skill
3 and judgment. A tacit assumption has been made that the local
4 governments would be capable adequately of handling the
5 municipal governmental and housing problems associated with
6 such a development. My testimony at this time is that,
7 although we are making great efforts in this direction and
8 are attempting to be ready for the problems, it is not clear
9 now that we will see and that we will have adequate safeguards
10 in time.

11 The regional planning commission has had the complete
12 cooperation of the Department of the Interior in requests
13 for assistance for guidance as well as for cooperation from
14 each of the major companies active in developing shale. It
15 is also true that the companies most interested in the development
16 of shale have each expressed, usually privately, almost as
17 much concern about the problems of housing and trailer
18 houses as I have expressed here this morning. There are
19 means within reach of the local communities to afford adequate
20 safeguards for the preservation of the local way of life,
21 but there are also handicaps of inertia, of the problem, to
22 cite the outstanding example, of dealing with mobile home
23 developers, salesman, and the land developers.

24 To summarize and sharpen these remarks, I suggest
25

1 the following: No 1. The statement should be amended to
2 define the impacts on housing and upon the communities. It
3 should not wait for the studies now underway.

4 No. 2. Massive Federal and industrial help in a
5 variety of forms will be necessary to avoid destruction of
6 the quality of western living.

7 No. 3. Particularly local government is facing a
8 great challenge. I want to add parenthetically at this time,
9 as I read this statement, I was struck with a horrifying
10 thought that someone might think of the State of Colorado
11 would anticipate this. If anything is clear, it's clear that
12 isn't the source of the answer we need from our experience
13 in the last 14 months.

14 No. 4. And finally, the challenge can be met but
15 not at the present rate, not with the present effort.

16 Thank you very much. The staff chairman of the
17 planning commission is here and he wishes to make a statement
18 at a later time, this morning.

19 JUDGE RAMPTON: Thank you, Mr. Cooley.

20 We have next listed a representative of American
21 Petrofina Company of Texas.

22 MR. MORAN: Mr. Chairman, members of the panel,
23 ladies and gentlemen. My name is John R. Moran, Jr. I am
24 an attorney practicing in Denver, and I appear here today on
25

1 behalf of American Petrofina, Incorporated.

2 American Petrofina was organized in 1956. It is a
3 publicly held corporation with stock being traded on the
4 American Stock Exchange.

5 The company is engaged in two principal lines of
6 business: Energy products and petrochemicals and plastics.
7 The energy products division is operated by American Petrofina
8 Company of Texas, which is responsible for exploration and
9 production of crude oil and natural gas and for refining and
10 distributing conventional refined products. American Petrofina
11 markets its products principally under the FINA brand in 24
12 states, including Colorado, Utah, and Wyoming.

13 FINA has oil and gas production in the States of
14 Texas, Louisiana, Arkansas, Oklahoma, Kansas, New Mexico,
15 Wyoming, and Colorado.

16 The company's chemical and plastic division is
17 operated by Cosden Oil & Chemical Company, a wholly-owned
18 subsidiary, which manufactures petrochemicals, polystyrene
19 and polyethylene emulsions and which markets under the COSDEN
20 brand. COSDEN also licenses others with respect to certain
21 of its proprietary manufacturing processes.

22 For some years, American Petrofina has been a
23 leader within the energy fields industry in the installation
24 of facilities at its refineries to effect air and water
25 pollution control. For example, during the early 1950's, at

1 its Big Spring, Texas, refinery, FINA was probably the first
2 to utilize the treated effluent from a municipal sewage plant
3 as a water source for a refinery operation.

4 By using air cooling techniques in the refining
5 processing industry, FINA has effectively reduced its process
6 water requirements for its refineries.

7 Several years ago, acting on its own initiative,
8 and for the purposes of achieving higher air quality, FINA
9 installed the sulphur recovery facilities at its Big Spring
10 and Mount Pleasant, Texas, refineries where the company
11 processes what is known as sour crude.

12 Since 1968 FINA has installed a system for treating
13 water and removing sulphur, particulate matter, and smoke
14 from the vapor effluent streams from its refineries.

15 In 1970 FINA developed a secondary use for refinery
16 waste water from its Big Spring, Texas, refinery. By filtering
17 and refining its waste water and pipelining the reclaimed
18 waters from 30 miles, the water is now able to be used in
19 secondary recovery operations to increase the efficiency of
20 oil recovery from oil fields in the area.

21 Notably, as air and water pollution control
22 technology has developed over the past several years, American
23 Petrofina -- with approximately 8/10ths of one percent of the
24 nation's refining capacity -- has averaged the expenditure
25 of approximately \$1-million per year to effect air and water
pollution control.

1 This background and the examples of FINA's efforts
2 with respect to air and water pollution control, and its
3 application of such controls in an area of limited water
4 availability, show a company concerned with the environment
5 and the prevention of waste.

6 For at least the past ten years, American Petrofina
7 has been interested in the development of synthetic fuels from
8 either or all -- tar sands, coal, or oil shale -- as a means
9 to meet the increased energy demands. It's interest in these
10 fuels, together with an ever increasing awareness of probable
11 energy resource shortages, led the company to retain in 1967
12 the services of engineering consultants in Denver to assist
13 the company in becoming fully informed of the potentials and
14 the problems in development of an oil shale industry.

15 Based on the engineering information provided by
16 its consultants and other data developed by the company
17 itself, and including information gathered with other interested
18 companies in an authorized core drilling program in the
19 Piceance Creek Basin as well as the result of an environmental
20 investments in that area funded by FINA, and others, which
21 investigations, by the way, are still continuing -- American
22 Petrofina has concluded that the development of a shale oil
23 industry should commence, and with known and available
24 technology can commence.

25 The Environmental impact statement before this

1 panel, particularly Volume II, Pages 8 and certain following
2 pages, substantially document the nation's present and future
3 energy requirements. If one is to believe the forecasts in
4 the Statement, and there is no substantive evidence that they
5 are not true, the nation will be faced with an energy crisis.

6 In applying for a lease of Federal oil shale acreage,
7 the oil industry -- of which American Petrofina is a member --
8 is seeking to avert that crises. And if the crises is not
9 apparent, as some may suggest, it is now time while we may
10 yet have time to proceed at a measured pace to develop oil
11 shale as a reliable energy source, but with due consideration
12 to the alternatives, and with an intelligent attitude towards
13 the environment and its protection.

14 Some argue that the technology for an oil shale
15 industry is not yet available. A review of available literature,
16 and the Impact Statement in particular, would lead one to
17 conclude that the technology is available.

18 Some admit the existence of a technology, but urge
19 that nothing should be done to develop oil shale because of
20 possible adverse effects upon the environment. The advocates
21 of this view ignore the repeated declarations by the oil shale
22 development participants that they, too, have a protective
23 attitude toward the environment.

24 From the testimony presented at Denver -- the Denver
25 hearing on October 10, 1972, and from the viewpoint I express,

1 it is to be expected that the participants will do their
2 utmost to use all reasonable and necessary means to assure
3 such protection as is exemplified by the awareness of American
4 Petrofina in the implementation of pollution control technology
5 in its own operations.

6 Others argue that oil shale development, if it is
7 to proceed at all, should be limited to private lands. That
8 view fails to take into consideration that a substantial portion
9 of the Federal acreage has deposits of high oil shale, has
10 probably less overburden, and, under the proposed leasing
11 trend, could become available to participants capable of
12 undertaking development, but who would otherwise be denied
13 the realization of their capability if they had to acquire
14 private lands.

15 Significantly, reliance on Federal oil shale lands
16 involves participation by industry and by government toward
17 a common goal and with greater assurances that the interests
18 of all will be protected. These assurances will come by way
19 of stipulations which are to be made a part of the lease
20 agreement if and when the leases are issued; but most important,
21 a condition to even submitting a bid for lease requires that
22 those desiring to participate to submit a plan of development
23 for the prototype or pilot period and for each subsequent
24 stage of development, and these plans will most certainly be
25 scrutinized from all points of view.

1 Arguments have been presented to the effect that
2 the whole concept of oil shale development is premature, that
3 industry and government are guilty of hasty action, and that
4 before anything else is done further studies should be
5 undertaken. These arguments miss the point. The matter presently
6 before this panel and the public is not a full oil shale
7 development program. What is or should be under consideration
8 is the justification for a prototype program. It is through
9 the prototype program that information will be gathered and
10 evaluated, thus providing the future study urged by some
11 opponents. It will be through the prototype program that the
12 feasibility of a full scale development will be learned, thus
13 avoiding hasty action. It will be through the prototype
14 program that the long-range problems are identified and
15 solutions found.

16 If industry cannot or does not act to serve the
17 best interests of all, the presence of the Government from
18 the inception of the program, assures the protection of the
19 public's interests. The prototype program has not been
20 conceived to determine what the shale oil is producible
21 because it can be produced. The essential function of the
22 prototype program is to provide us with the knowledge of the
23 most appropriate way to produce shale oil and to provide us
24 with management techniques for the effects of its production.
25

1 American Petrofina's here today to support the
2 proposed prototype oil shale leasing program. It recognizes
3 the need for oil shale as an energy resource and reconfirms
4 its own conclusion that the development of this resource must
5 commence. It is cognizant of numerous development problems
6 and their possible effects on the environment. These obstacles
7 notwithstanding, American Petrofina Company is continuing to
8 treat its own capabilities to meet the problems. It affirms
9 its interest in seeing the program through to successful
10 development from which all can benefit.

11 On behalf of American Petrofina, and in closing,
12 I wish to convey the compliments of American Petrofina to the
13 United States Department of the Interior and its staff on the
14 comprehensiveness of the environmental statement. It reflects
15 what others have said, and I'm not original in those remarks,
16 but it's true. It reflects the expertise of those involved
17 and the concerns we all share as responsible citizens.

18 Thank you.

19 JUDGE RAMPTON: Thank you, Mr. Moran.

20 Mr. Russ Cameron.

21 MR. CAMERON: Mr. Chairman, panel members. I have
22 a rather lengthy prepared statement which, with your permission,
23 I will submit for the record and paraphrase in my presentation.

24 JUDGE RAMPTON: All right.

25 MR. CAMERON: Also, before the deadline for

1 the submittal of additional comments, we will provide a
2 fully annotated amplification of this statement.

3 I'm Russell Cameron and I represent Cameron Engineers
4 of Denver. Our organization has long been associated with
5 attempts to develop oil shale. We welcomed this opportunity
6 to present our views on the Portotype Oil Shale leasing
7 program.

8 The Department is to be commended for its thorough
9 treatment of the environmental consequences of oil shale
10 development. Not only are the impacts of a prototype leasing
11 program detailed, but the statement provides a projection of
12 the environmental effects of a mature oil shale industry at
13 a point many years in the future. Since the purpose of the
14 prototype program is to provide guidance for the ultimate
15 development of the resource, a glimpse at the impacts of large-
16 scale production is useful, even though difficult to visualize
17 at this point in time.

18 The need for oil shale is well-documented in that
19 portion of the statement dealing with energy alternatives.
20 However, our own studies of the energy posture of the United
21 States do not lead us to be as optimistic as some sources
22 quoted regarding the potential for domestic oil or our
23 continued access to foreign petroleum on an acceptable term.
24 We, therefore, attach more urgency to the program and the
25 subsequent commitment of the significant levels of shale oil

1 production than I interpret from the Statement.

2 I cannot agree, for instance, with the suggestion
3 in the report, Volume II, Page 27, that our "Indicated reserve
4 plus undiscovered resources producible with current economics
5 and technology" total 417-billion barrels. The qualification
6 "once they have been found" contradicts the implication that
7 current economics apply. This figure is pure geological
8 speculation and has little relevance to the period under
9 consideration. The Department's own projections and those
10 of others indicate that we probably will be unable to maintain
11 even current levels of oil production over the next 15 years,
12 and this is what is relevant.

13 Regarding imports, because of the long lead-time
14 needed to develop any of our large new energy resources, we
15 seem inevitably to turn to imports of oil and gas as the only
16 immediate solution. The statement clearly points out the
17 hazards of this course. It is my personal opinion that we
18 will be denied much of our present access to imported fuels
19 within five years by a combination of economic and political
20 factors. In this regard, the Rocky Mountain area -- Colorado,
21 Utah, Wyoming, and Montana -- has long been an exporter of
22 oil to the rest of the nation. H~~O~~wever, oil production,
23 despite increased exploration, has peaked in 1961 at
24 693,000 barrels a day. It's the largest production figure
25 on record for the states. Today production is about 650,000

1 barrels a day and is declining. The State of Colorado reached
2 its peak production in 1956 at 160,000 barrels a day, and
3 today production is less than half of that, and most of the
4 decline has come from diminishing production in the Rangely
5 Field. Over the Labor Day holiday there were spot shortages
6 of gasoline in Denver. On October 8th there was an announcement
7 in the Denver Post of a \$20-million 80,000 barrel per day
8 products pipeline from Denver to Kansas. Industry sources
9 have already noted that pipeline connections are being made
10 to bring foreign crude to Oklahoma and Kansas refineries; thus,
11 the Rocky Mountain crude oil will soon -- I mean, Rock Mountain
12 area markets will soon be using products produced from crude
13 oil that originate as much as 10,000 miles from the area it
14 serves. You people in Grand Junction will be burning gasoline
15 that originated in Saudi, Arabia.

16 Another area which is becoming somewhat critical is
17 the source of energy for our electric power and our gas supplies.
18 In Denver the other day I believe there was a young lady who
19 suggested that if we are running out of oil we ought to use
20 electricity -- it was cleaner anyhow. Sort of reminds you of
21 during the French Revolution of a certain lady suggesting if
22 you were out of bread you ought to eat cake.

23 Oil shale could have a very beneficial impact on
24 our supplies of clean fuels or electricity or gas. Shale oil
25 can be refined into a clean-burning, low-sulphur fuel oil. A

1 coal product of that operation will be a light naptha that
2 can be converted into a substitute for natural gas. This
3 shale oil can be a factor in the solution of oil shortages,
4 of electricity shortages and gas shortages throughout the
5 nation, and a solution to their environmental problems.

6 The Department, in its treatment of the environmental
7 factors of oil shale development, we believe have gone a little
8 bit too far in being cautious and being even-handed in some
9 of its assessments. For instance, the implication is given
10 that a change of land use from the primarily agricultural
11 areas, stock grazing, wildlife, and so forth, is bad. It's
12 my contention that changes in land use are not all that bad.
13 Considering that over-grazing and unrestricted access by
14 vehicles has caused severe erosion throughout the oil shale
15 area, a well-controlled oil shale development should bring
16 about a measurable improvement in watershep protection and
17 the ability of these areas to support wildlife.

18 We also believe that the impact on the local
19 communities can be beneficial. As was pointed out earlier,
20 the economy and much of the region has been declining for
21 some years. The tax base, payrolls, and job opportunities
22 should stimulate those communities.

23 Let me point out also that the importation of
24 1-million barrels per day of crude oil from overseas is
25 essentially exporting 48,000 jobs. The report suggests this

1 million-barrel per-day industry would employ some 48,000
2 people.

3 It also suggests that the investment will be as
4 much as \$5-billion. That is \$5-billion worth of tax base that
5 we also export when we import a million barrels a day. It
6 seems to me overall that the economic affect of shale development
7 is a very powerful factor and must be balanced against any
8 necessary and unavoidable environmental impact.

9 Health and safety, which was a subject of a rather
10 emotional presentation in Denver the other day -- health and
11 safety should be improved in oil shale plants and mines built
12 to contemporary standards; and in any case, should not be
13 compared to coal mining. The copper industry is more akin.
14 Fatalities in the mining, milling, and smelting of copper for
15 the entire country averaged 21 per year, the years 1967 to
16 1970. It is completely fallacious in my mind, as suggested
17 in the Environmental Statement, to even suggest that 1,100
18 deaths would result from oil shale mining by 1985 when an
19 entire industry only has 20 deaths per year, and this industry,
20 by the way, mines and mills or disposes of almost 1-billion
21 tons per year of ore and overburden.

22 Going on to factors which I'll mention later on,
23 we think it unlikely that shale oil products in the three-state
24 area will exceed the 400- to 500-thousand barrel per day
25 range by 1985. Therefore, the magnitude of the impact would

1 be only one-half of that estimated in the environmental
2 statement for 1985.

3 Another point that we take some exception to is
4 the suggestion that an oil shale industry is going to foul
5 up the Colorado River and its tributaries. The salinity
6 increase factor is a very emotional one and we think should
7 be put into its proper perspective. The discharge of low-
8 quality water, whether it be contaminated run-off, waste water
9 from retarding or upgrading plants, or excess mine water into
10 surface streams, will happen. Legally these waters must be
11 controlled. Otherwise there will be no oil shale industry.
12 Actually, any of these low quality-waters will be used for
13 solid waste disposal as was pointed out in the statement.

14 The other source of contamination that is suggested,
15 that because good water will be removed from the Colorado
16 River high on its drainage, that it's dilution effect on the
17 lower Colorado will cause an increase in salinity at Hoover
18 Dam and below. A report issued in 1971 by the Environmental
19 Protection Agency, United States Environmental Protection
20 Agency's Regions 8 and 9, the mineral quality problem in the
21 Colorado River Basin, summer for 1971. This report shows
22 that 66 percent of the salt load at the Hoover Dam is caused
23 by natural sources, 33 percent by irrigation, and only one
24 percent by existing municipal and industrial uses. The
25 present concentration of salt at Hoover Dam averages 730

1 milligrams per liter. The increase called by a million-barrel
2 per-day. Oil shale industry is estimated by the Department
3 to range from six to ten milligrams per liter. By contrast,
4 the salinity in the river increases to about 870 milligrams
5 per liter at Imperial Dam below Hoover Dam, and is over 1,100
6 milligrams per liter as it flows into Mexico. Most of the
7 400 milligrams-per-liter increase below Hoover Dam is caused
8 by agricultural practices in Arizona and California. Compare
9 this to six to ten milligrams per liter that's suggested to
10 be the maximum increase in salinity that could be called by
11 the shale oil industry.

12 I'd like to comment on another misconception that
13 I hear from place to place. This is the suggestion that this
14 program should not go forward until the completion of all of
15 the various studies that are being conducted that relate to
16 environmental impact. Specifically, the studies that are
17 being sponsored by the State of Colorado, the Federal Government,
18 and industry, the \$715,000 four-part study.

19 I'd like to point out that these studies are to be
20 completed within two years. A lessee who receives a lease
21 under this prototype program must submit his detailed plans
22 three years earlier. So these studies will be completed prior
23 to the time that the detailed plan of the lessee is submitted
24 to approval.

25 I'd like to finally comment on one other aspect of

1 oil shale development, especially as is projected in this
2 study. In its treatment of alternatives and of the environ-
3 mental impact of large-scale production, the Department has
4 presented convincing evidence of the need for an energy input
5 on the order of a million barrels of oil today. My concern
6 is that under present conflicting policies and actions by
7 Government, this target will not be reached. The prototype
8 leasing program, although essential, is only one small step.
9 20 50,000-barrel-per-day plants, must supply in excess of
10 5-billion barrels. This is unlikely to be done in the
11 shortened space of 12 years. If it is in the national
12 interest to obtain a million barrels per day of shale oil,
13 and I believe it is, then there must be a national goal to
14 do so. Such a goal should be a part of a national energy
15 policy that provides for the use of secondary energy resources
16 before primary resources are exhausted. To do this by 1985
17 we must rapidly accelerate the time to acquire fundamental,
18 environmental, technical, and economic data. To do this
19 there will need to be a sharing of the risks and the costs
20 by industry and the government.

21 But this statement is not directly to the subject
22 of this inquiry, it seems to be basic to the development of
23 the use of shale oil. Unless we are prepared to solve the
24 other problems that face oil shale, there is little benefit
25 from an effort to find means to ameliorate environmental

1 impact.

2 I'd like to finally conclude by reiterating that
3 this program had adequate safeguards. If the lands for
4 which leases are issued during this program could not be
5 developed in a manner consistent with environmental integrity,
6 no development would occur and no further leases would be
7 issued until environmental protection could be assured.
8 Industry knows these conditions and we believe it is willing
9 to accept them.

10 We urge the Secretary to proceed with the program
11 as defined in the Draft Statement without delay.

12 JUDGE RAMPTON: Thank you, Mr. Cameron.

13 We have next on the list a representative of the
14 Aspen Wilderness Workshop. Is there anyone present in the
15 auditorium who represents the Aspen Wilderness Workshop?
16 Mrs. J. W. Rogers?

17 MRS. ROGERS: I am representing the Aspen Pitkin
18 County League of Women Voters, and the Grand Junction League
19 of Women Voters.

20 Because of the difficulties citizens have had in
21 obtaining a copy of the Environmental Impact Statement, and
22 because of the length of the statement, we have had a difficulty
23 in examining it properly in the time that it has been available
24 to us. We request that the comment period for these hearings
25 be extended at least 30 days beyond October 23rd.

1 We are also particularly concerned about the Western
2 Slope, and in view of the fact that the Draft Environmental
3 Statements admits that the development of an oil shale industry
4 would have a major environmental impact on the regions to be
5 developed, we wonder if the United States should enter into
6 a full-scale oil shale leasing program either a state or
7 national land use plan has been developed. How will the
8 neighboring communities cope, financially with the impact of
9 the sudden increase of population? Also, what will be the
10 impact on the human resources? Have these things really been
11 fully evaluated?

12 We are also equally concerned about the water
13 resources. We want to know, is the 160,000 acre feet of water
14 projected to be used annually, will that actually be totally
15 consumed? Who will be responsible for overseeing the erosion
16 control facilities, also the salinity control, and other
17 environmental impacts over the long range? And who will be
18 financially responsible for them? Also, does this amount of
19 water include water for the domestic use which will be needed
20 for the tremendous increase in the population growth?

21 We have noted in the Draft Statement that up to
22 340 tons of sulphur oxides, 120 tons of nitrous oxides, and
23 40 tons of fugitive dust and particles will be admitted daily
24 under full operating conditions. We wonder how these daily
25 emissions will affect the quality of the air, particularly

1 on the Western Slope, and how the developing industry plans
2 to meet the air quality and emission standards which are set
3 by the State of Colorado? Has the total impact on our air
4 from the present and projected power plants in the Four Corners
5 area and in Wyoming and in the oil shale development here,
6 have all of these together been computed?

7 We urge you to seriously consider all of these
8 factors that we have mentioned, and also to extend the comment
9 period another 30 days so that there may be more citizens'
10 input.

11 Thank you.

12 JUDGE RAMPTON: Thank you, Mrs. Rogers. Your
13 request will be considered by the panel and transmitted to
14 the Director.

15 MRS. ROGERS: Thank you.

16 JUDGE RAMPTON: We have next from the list a
17 representative of the Board of County Commissioners, Rio
18 Blanco County.

19 Mr. BRENNAN: Mr. Chairman and members of the panel.
20 I'm Bill Brennan, chairman of the Board of County Commissioners
21 in Rio Blanco County.

22 The Board of County Commissioners at Rio Blanco
23 County supports the development of the Oil Shale Reserves
24 located in Rio Blanco County. Over the years, the Board has
25 cooperated with all Federal and private projects in working

1 towards the development of the shale resources. The County
2 has expended over a million dollars in developing a paved
3 road along Piceance Creek along the heart of the shale to aid
4 in this development.

5 The impact of the development of a shale industry
6 in Western Colorado and the economy of Rio Blanco County would
7 be substantial. As the Draft of the Environmental Statement
8 shows, Rio Blanco County has the highest per capita property
9 tax receipt of the three counties involved. The report also
10 indicates that Rio Blanco County has the lowest unemployment
11 rate in 1970, well below the national average. Both of these
12 figures somewhat distort the actual situation.

13 The principal taxpayers in Rio Blanco County are
14 the major oil companies involved in the Rangely Oil Field
15 and the Wilson Creek Oil Field. We believe the actual income
16 of the average Rio Blanco County resident is below the national
17 average. The low unemployment rate is due to the large road
18 and bridge crew employed by Rio Blanco County. The decline
19 of agriculture in the United States has not helped matters
20 any, and development of a shale industry in Rio Blanco County
21 would produce a substantial boost in our economy.

22 The Board is deeply concerned over the environmental
23 aspect of the development of a shale industry in Rio Blanco
24 County. Most of the residents of the county live there because
25 they like the way it is. They like the clean air, clean water,

1 the small town and rural pace of living. We recognize that
2 we cannot have our cake and eat it, too; however, we feel that
3 the problems of clean air and water can be handled through
4 restrictions and requirements placed in the Federal leases
5 when they are issued.

6 We also recognize that development of a shale
7 industry will produce an influx of people into our county
8 which will have a direct affect on the manner in which we
9 presently live. We are already seeing changes along these
10 lines as a result of the development of the recreational
11 potentials of the White River Valley.

12 The Board supports and prefers the development of
13 oil shale by private industry rather than by the Government.
14 The report is misleading in that it implies that the royalty
15 payments by the Government for governmental development of
16 the shale would go to the various counties involved. In fact,
17 a substantial portion of this money would be cut off by the
18 State of Colorado by virtue of a statutorily imposed limit
19 which limits the county share of the royalty payment to
20 \$200,000.00. The county would then be expected to maintain
21 the roads, provide the schools, and provide all the other
22 necessary essential government services to the workers who
23 move to the county to develop the shale, without receiving
24 adequate revenue to meet these increased costs. Private
25 developers would, in fact, pay their fair share of taxes

1 to the county to cover the costs of the needed services and
2 facilities.

3 The Board of County Commissioners of Rio Blanco
4 County will continue to cooperate with and work with any
5 Federal or private project whose aim is the development of
6 the shale resources by private industry, provided that such
7 development is done in such a way as to reasonably insure
8 that the quality of the air and the water resources of the
9 county will be kept at their present level.

10 I thank you.

11 JUDGE RAMPTON: Thank you, Mr. Brennan.

12 We'll take a short recess. I'll ask that you be
13 back in your seats at ten minutes to eleven.

14 (Whereupon, a short recess was taken.)

15 JUDGE RAMPTON: If there's anyone who has not signed
16 the register in the front foyer, will you please do so before
17 you leave?

18 We'll now have a representative from the Colorado
19 Rivers Council.

20 MR. SCOTT: Mr. Chairman, my name is Tam Scott,
21 and I'm the executive director of Colorado Rivers Council.
22 And I have a letter here directed to the Department of Interior,
23 and but for a typographical faux pas, I would have had copies
24 available for the Reporter and other people, and I would be
25 glad to make them available. If anyone's interested in

1 receiving copies of this, they should talk to me, Box 1815,
2 Aspen, Colorado, 81611. I'd be glad to send them copies of
3 these draft comments and any other comments of which our
4 organization sees fit to come up with during the next few
5 weeks on this matter of the statement.

6 So, without any further ado, I'd be glad to read
7 this letter and send you, Madam Reporter, a copy as soon as
8 I can get it.

9 Gentlemen, thanks for placing us on your public
10 hearing list and sending us the above-mentioned three volume
11 draft statement, which I received at the start of this week.

12 The following comments are made for and on behalf
13 of the directors of Colorado Rivers Council. I have not had
14 sufficient time to review your statement and these comments
15 with the directors. We will try to do this within the month.
16 Accordingly, for the record, please accept the contents of
17 this letter as draft comments.

18 By way of background, Colorado Rivers Council is
19 a Colorado non-profit corporation comprised of a membership
20 of about 500 persons from Colorado and elsewhere around the
21 country. Original incorporation papers were filed with the
22 state on September 22, 1972, for Eagle Piney ater Protection
23 Association. This September the directors amended the articles,
24 changing the corporate name to Colorado Rivers Council.

25 CRC is primarily an environmental organization

1 working for, among other things, the protection of natural,
2 free-flowing rivers in the high country because we feel are
3 vital to the state's economy, and environment, and cultural
4 heritage, and well-being.

5 For obvious reasons, the proposed oil shale
6 development, with its predicted water resource requirements,
7 and other associated impacts -- poses a serious threat to
8 the water and the environment of the West Slope country,
9 hence our interest in making these comments.

10 With these thoughts in mind, here are a few observations
11 on the draft statement and our requests to Interior to revise
12 its approach to oil shale.

13 The first section of comments refers to the
14 restriction of the proposed action and the environmental
15 impact thereof -- that general section in the statement.

16 Though thick in form and interesting to read, the
17 statement is woefully lacking in specific information and
18 analysis as to predicted water requirements and available
19 supplies for a developing oil shale industry.

20 First it states that "water resources of the area
21 are complex and varied . . . and requirements for an evolving
22 oil shale industry will change with time," at III-24, Section
23 3.

24 Then, rather positively, it states that approximately
25 25,000 to 40,000 acre feet a year of Colorado River water
will be required to develop 250,000 barrels per day under

1 the prototype leasing program; and anywhere from 80,000 to
2 160,000 acre feet for the projected development of a million
3 barrel a day industry by 1985, if everything goes according
4 to schedule.

5 Further, it is stated that major water requirements
6 for surface waters may not be needed over the first 25 years
7 of operations. Yet, elsewhere it is suggested that supply,
8 suitability, and environmental problems associated with the
9 use of ground water from mines, et cetera, may well be
10 insurmountable, and that construction of dams and resevoirs
11 will be necessary to assure a dependable water supply for
12 oil shale. These fleeting, self-contradictory, and never-never-
13 land references to water supplies and needs are somewhat of
14 an insult to our intelligence. The statement utterly fails
15 to provide the reader with sufficient information and
16 technical data adequate for a careful assessment of the
17 environment impact of the proposed action on Colorado water
18 resources. Thus, this section of the Statement fails to
19 comply with the Guidlines of the Council on Environmental
20 Quality and the National Environmental Policy Act.

21 For instance, the following are a few well-documented
22 factors in the water supply picture of the proposed action
23 that probably should have been issued in the Statement.

24 Number one, the possible effects of President
25 Nixon's recent proclamation regarding our difficulties in

1 meeting U. S.-Mexican treaty requirements concerning the
2 delivery of useable Colorado River water, and the basis for
3 the statement that "consumptive use of water for oil shale
4 development could increase the salinity in the Colorado River
5 system by one point four percent; and the steps Interior
6 plans to take to comply with the EPA approved Colorado "water
7 antidegradation statement."

8 And the complex and ultimate correlation between
9 the many proposed private, municipal, and quasi-governmental
10 state transmountain diversion projects and the salinity
11 problem in the Colorado River, and the realistic availability
12 of water therefrom for projected oil shale needs.

13 And the correlation between the various proposed
14 high mountain public and private water oil shale diversion/
15 storage problems and the U. S. Government's stream flow reserved
16 court claims for water on U. S. Forest and BLM lands and for
17 oil shale.

18 And the potential legal/environmental conflicts
19 involved Federal and private oil shale projects in de facto,
20 roadless wilderness areas on U. S. Forest lands, and on
21 potential Federal wild and scenic rivers.

22 And the possibility that enactment of the Federal
23 water resources council proposed seven percent discount rate
24 for water projects could well prevent the construction of
25 proposed Federal oil shale projects, such as the Yellow Jacket

1 and West Divide.

2 And the Rainbow Bridge litigation, which, according
3 to state water experts, could mean the loss to the Upper Basin
4 states of the consumptive use of about 750,000 acre feet of
5 Colorado River water a year, and the financial impossibility
6 of completing the unbuilt Storage Act Projects upon which oil
7 shale apparently depends, such as the West Divide.

8 And the complexity of the long-expected Indian
9 Water Rights Claims and the impact thereof on the realistic
10 availability of Colorado River water for oil shale.

11 And the legal, contractual, environmental, and
12 political problems associated with the future construction
13 of Federal oil shale water projects mentioned in the Statement,
14 West Divide and Yellow Jacket, all with the securing of water
15 for oil shale from Ruedi Reservoir, which would mean the
16 drastic lowering thereof.

17 These are just some of the apparent deficiencies
18 in the water resource section of the Statement which need
19 drastic revision and upgrading, in our opinion, to make it
20 legally viable.

21 Then, as to irreversible and irretrievable
22 commitments of water resources, the letter goes on to say,
23 according to CEQ guidelines, Interior must identify the expense
24 to which oil shale's water resource demands would curtail
25 the range of other public beneficial uses of the natural

1 environment of the rivers where all the diversions and dams
2 supposedly need to be built. There is absolutely no study
3 or explanation of possible irreversible damage to the
4 recreational and aesthetic resources of these river systems.
5 We question whether or not irretrievable commitments of this
6 sort are justifiable simply in terms of economic benefits.

7 For as to alternatives and mitigating measures,
8 sections of the Statement consider energy alternative and
9 mitigating measures relative to the oil shale sites themselves.
10 But nowhere is there a study, development, or description of
11 appropriate alternatives to the recommended course of action
12 in connection with damming and diverting the White and Colorado
13 Rivers and their tributaries. In this respect, the Statement
14 also fails to comply with CEQ guidelines and NEPA.

15 We submit there are crucial alternatives and
16 mitigating measures Interior must consider instead of assuming
17 that conventional water project developments are the answer
18 to the oil shale water supply problem. The South Fork of
19 the White River is a classic example. Various water developers
20 and agencies, including the Federal Government, think a dam
21 is needed on the South Fork for oil shale purposes. Yet, it
22 appears that the oil shale industry -- I should say it appears
23 from the Statement and from general knowledge, that the oil
24 shale industry wants water out of the White and Colorado
25 Rivers much lower down where the mineral/salinity content is

1 much higher. That's because the oil shale industry didn't
2 need or want clean water, and it certainly doesn't want the
3 blame for worsening the salinity pollution problems on the
4 Colorado River, either. Considering this, perhaps it isn't
5 necessary to inundate the South Fork which happens to be
6 one of the best wild river candidates in the State of Colorado.
7 This is a State where there are no wild or scenic or recreational
8 rivers designated. Storage facilities could be built in the
9 Piceance Basin; pumping facilities could be constructed. The
10 Federal Wild Scenic Rivers Act should be looked at for both
11 its mitigating measures and as water supply protection
12 measures for the oil shale industry. Yet the Statement mentions
13 none of these possibilities.

14 All of this obviously requires some imaginative
15 thinking, but that's what alternatives and protecting the
16 environment are all about these days. We think it's about
17 time Interior paid some attention to the Federal Wild Scenic
18 Rivers Bill. This a logical approach to mitigation.

19 We earnestly request Interior consider our negative
20 comments and implement our suggestions for positive alternatives
21 and mitigating measures before finalizing this Statement or
22 any recommended course of action.

23 And, in final comment, I would like to say that
24 when I have a chance to take up the matter of this Draft with
25 the Directors of the Council, we will be glad to revise these

1 comments or subtract by way of subtraction or addition and
2 send our revisions to the Hearing Office in Arlington, Virginia,
3 for your consideration.

4 Thank you for giving me the opportunity to make
5 these observations.

6 JUDGE RAMPTON: Thank you, Mr. Scott.

7 The next is the representative of the Colorado
8 Sportsmen's Association.

9 MR. ALLEN: Thank you, Mr. Chairman. My name is
10 Norman Allen; I'm president of the Colorado Sportsmen's
11 Association.

12 The Piceance Creek Basin encompasses an area of
13 approximately 805,000 acres, most of which is winter habitat
14 for approximately 24,000 to 35,000 head of deer. One point
15 I'd like to bring out here is the number of deer is governed
16 by the amount of winter range we have. The amount of summer
17 range is adequate for more animals than we have.

18 This is the largest herd in the United States, if
19 not possibly the entire North American Continent. This herd
20 is 20 percent to 25 percent of the deer population of the
21 State of Colorado. There have in the past been an important
22 source of revenue to the State to the tune of nearly
23 \$2-million annually in the sale of hunting licenses alone.
24 In 1969, 40.8-thousand hunters hunted in the basin. Of this,
25 29.4-thousand were non-residents. If each spent \$50.00 for

1 a hunting license, they would have spent \$1,462,500.00 for
2 licenses alone. This would leave 11,4-thousand residents
3 who would spend \$7.50 for a hunting license. This would
4 amount to \$84,375.00 which, when added to the non-resident
5 fees would amount to a total of \$1,546,875.00 spent for
6 licenses alone, not to mention dollars spent on lodging,
7 transportation, et cetera. In some years the total is even
8 higher due to increases in our deer herds.

9 The Department of the Interior's propsoed open pit
10 mine would create an area of approximately 5,120 acres and
11 would be approximately 1,100 feet or deeper. This would cause
12 complete and total destruction of wildlife habitat life in
13 the area.

14 To accomplish this, 256-million cubic yards of
15 loose waste would have to be deposited off site. This alone
16 would create a pile of waste that could be laid on an area
17 of 16 square miles to a depth of 30 feet, or, to put it
18 differently, could cover the entire City of Grand Junction to
19 a depth of 30 feet. This is not taking into consideration
20 the waste from the spent shale after processing it. This,
21 too, would require taking more habitat and range away from the
22 deer herds and wildlife.

23 All waste and residue would have to be deposited
24 off site for the initial years of operation and will require
25 a land fill that would be a definite detriment to the wildlife

1 habitat. These areas would have to go through a lengthy,
2 time-consuming process of revegetation that has neither
3 proven to be feasible or possible in the arid basin region.
4 This again will reduce the wildlife habitat at least temporarily,
5 but the wildlife cannot wait several years for their feed
6 and habitat to be replaced. Notable decreases in the wildlife
7 over this period will be a must, and I find it hard to believe
8 they will ever be replaced, even if revegetation is accomplished.

9 Other sources of reduction in wildlife habitat will
10 be the construction of processing plants, roads, and pipeline
11 and utility installations. These will have as great an impact
12 on wildlife as will pick operation and disposal facilities.

13 A fact not taken into account in the Environmental
14 Impact Statement is that all wildlife will avoid all areas
15 of operation where noise and human pressure exists for about
16 one-half mile to one mile in all directions. This would
17 amount to more loss of wildlife habitat, although the habitat
18 is not directly affected by destruction from mining operations.

19 From these facts we could calculate the area of
20 wildlife habitat to be lost to be more in the area of 75,000
21 to 100,000 acres per operating site.

22 This in turn would call for near total loss of the
23 White River migration herd and leave little if any hope of
24 its ever returning to its present state after mining operations
25 have ceased.

At the present consumption of oil in the United States, it has been estimated that we have only a 15-year supply of oil left. The United States uses 3,517,450,000 barrels of oil per year at the present. If the oil industries can in fact reach its goal of 100,000 barrels per day production from oil shale, it will produce 36,500,000 barrels per year. Over a period of 30 years, as proposed by the oil industries for the prototype leasing program, they will have produced 1,095,000,000 barrels of oil. At the present consumption rate, this would last the United States a mere 1.5 months or 45 days. Is the price we are asking to pay for 45 days of oil worth it? Effectuated loss to animals, such as mountain lions, elk, peregrine -- endangered species -- and prairie falcons could be up to 20,000 acres per year. For the Department's proposed 30-year program, this amounts to 600,000 acres, subtracted from 805,000 acres, leaves only 205,000 acres for their remaining habitat. From these facts we could assume a complete loss of these animals from the area as they could not withstand this kind of pressure for such a prolonged period of time.

A proposed airstrip would be further encroachment on the habitat and harrassment of wildlife. If complete utilization of the sites are used as proposed, there could be no possible way to have an on-site airstrip. This would result in further loss of wildlife habitat for an off-site airstrip.

1 If companies can afford to sink millions of dollars into an
2 oil operation, they can surely afford to keep a fleet of
3 vehicles at an airstrip in Rifle or Meeker for transportation
4 to and from site areas.

5 The Department of Interior's Draft Environmental
6 Impact Statement is totally inadequate in both scope and
7 content. The Department has considered only point five
8 percent of the oil shale area having potential economic
9 interest. The study does not consider the adverse effects
10 of a mature long-range industry, nor does it adequately
11 appraise the potential impact on water resources in the lower
12 Colorado River Basin.

13 It seems reasonable to consider a long-range program
14 rather than the proposed short-term program for one simple
15 reason. After private companies have spent millions of
16 dollars in the development of oil shale and find it to be a
17 profitable enterprise and wish to continue operations to
18 recover and profit on their investments, it would place the
19 Interior Department in a very difficult -- if not impossible --
20 position to shut down the industry even if the environmental
21 effects proved to be grossly unacceptable.

22 I find it hard to believe that the revegetation
23 of backfill areas to a condition that would provide a good
24 wildlife habitat will be "difficult and time-consuming" if
25 not altogether unfeasible.

1 It is further unreasonable to assume that open pit
2 mines would be completely back filled under any circumstances.
3 Both overburden and spent shale would have to be stored
4 off site during initial years of operation. Since the shale
5 volume after retorting exceeds the in-place volume before
6 mining, it is impossible to return all such shale waste to
7 the pit area without creating an elevated land surface.

8 Wherever stored, the spent shale must be permanently
9 shielded from percolating ground and sub-surface water.
10 Engineering safeguards may be effective during the lifetime
11 of the oil shale plants, but who is to maintain the protection
12 works after the site is abandoned? Unfortunately, these
13 questions were not even raised much less answered.

14 The goal of no degradation of water quality is
15 patently impossible in an operational sense. Because of
16 consumption of waters to be used in shale retorting, inevitable
17 reductions of the quality of water available for dilution of
18 downstream pollution loadings will occur. This added to the
19 projected 947 milligrams of salt to be injected into the
20 present river load makes aquatic or aquatic-dependent life
21 in the Colorado River impossible. If the oil shale industry
22 can, in fact, achieve its no degradation goal, it will indeed
23 be unique.

24 The possibility of alternative sources of energy
25 were discussed in the Impact Statement, but at no time was

1 the possibly of alternative methods of mining or site
2 locations discussed. After considerable research, the
3 Colorado Sportmen's Association feels there are alternative
4 methods and attracts sites available that would be far less
5 destructive to the wildlife and far more beneficial to the
6 environment.

7 The area between Roan Cliffs and the present State
8 Highway No. 6 is virtually useless as wildlife habitat and
9 winter range. Very few small game animals use this area.
10 This area could be used for both a plant and waste disposal
11 site without many, if any, adverse effects on wildlife or
12 environment.

13 One or more horizontal shafts in the Anvil Points
14 Experimental Station could be utilized for access into the
15 basin. This would create a situation with little or no
16 specific disturbance to the Piceance Creek area. In this
17 manner, the oil industries could possibly have their oil and
18 the people of Colorado could retain its deer and wildlife
19 for posterity.

20 JUDGE RAMPTON: Thank you, Mr. Allen.

21 Our next participant will be Mr. Richard Scales,
22 the Environmental Task Force.

23 (No response.)

24 JUDGE RAMPTON: Diane Smith.

25 MRS. SMITH: Mr. Chairman, members of the panel,

1 ladies and gentlemen. We are here today to discuss facts and
2 opinions in order to help the government come to a final
3 decision on a matter of national importance.

4 Sometimes a person will waver back and forth in
5 his thinking -- deciding a thing one moment, against it the
6 next. All of us need to have the courage to make decisions
7 and to follow through on them. The Department of the Interior
8 has been talking about oil shale since 1918; now, it's trying
9 to act.

10 Let us today reverse the flow of negative thought
11 and indecision. Let us give thanks for challenges and the
12 opportunity to solve them.

13 The cry of shortage is heard, in the middle of
14 abundance. There is ample supply of raw material here. Man's
15 part is to mold and shape this raw material into manifestation.

16 The report places the human being in the same
17 category as that "rare and endangered species, the hump-back
18 sucker and bony-tail chub fish." Could our priorities be
19 confused? Why should the welfare of the human being be
20 subordinated to these fish? If someone wishes to preserve
21 them, could they explain why it would take the whole Piceance
22 Basin to do it? With all due respect, are you sure a hump-back
23 sucker wants to be preserved? If that's not strange enough,
24 the human being barely gets equal billing with a bitter bush
25 or sagebrush. What is the contribution of these plants to

1 our world? Better vegetation could and should be growing
2 there. I'd like to hear about the improvements we should
3 make.

4 The pendulum has swung from bulldozing everything
5 that stood in our way to the threatened stoppage of a needed
6 industry for the sake of a fish or plant. Both ways are
7 extreme. Let us today choose the path of reason.

8 What I am concerned about is that rare and endangered
9 species, "the homosapiens." What is going to happen to us
10 if we run short of fuel? Have you ever been in a blackout?
11 Can you imagine the confusion when all the lights go out?
12 The elevators stop, the phones are silent, the surgeon's
13 knife stops in mid-air we hope. You think you can drive out
14 of it, but forget it. If you have gas in your car, the traffic
15 lights are stopped and the traffic's in a snarl. If you need
16 gas, the fuel pumps will have stopped working.

17 Let's look a little further into the future. No
18 warmth-- no jobs. Maybe one of our children will freeze to
19 death in the winter. Colorado winters are long and cold.
20 Maybe the power will fail in a hospital at a critical time
21 for you or a loved one. Maybe the old folks won't make it
22 in the dismal future world of cold and hardship. Somehow
23 these things touch me more than the hump-back sucker and the
24 bitter bush. It could be a dark age -- in more ways than
25 one.

1 But let us look at the positive side. All around
2 us is oil -- shale, dawsonite, which is a potential source of
3 aluminum, and nahcolite, which is a potential source for
4 cleaning up our environment. Let us explore these potentials
5 instead of wasting time "gloom-dooming" everything. I believe
6 they are God's gift for us to use beneficially. Why aren't
7 we using them?

8 As the Chairman of Continental Oil said, "If we
9 fail to meet our burgeoning energy requirements, it will not
10 be because the Lord failed to provide us with enough. It
11 will be because we lacked the perception, intelligence and
12 skill to foresee our problems and to move in timely manner to
13 meet them." I don't believe the great number of people who
14 have studied the problem so long lacked the intelligence to
15 solve it.

16 The report discusses location. Could there be a
17 better piece of land for industry? I've driven with my
18 husband for hundreds of miles through this arid country
19 without seeing anyone or anything. I cannot imagine anything
20 that is intelligently done that will not improve the area.

21 The report worries about increase in crime. A birth
22 in any town may increase the crime rate or it may produce a
23 future president. This reminds me of the story of the two
24 men tracking rocks. When the first man is asked what he's
25 doing, he answers, "Tracking rocks." When the second man is

1 asked, he answers, "I'm building a cathedral."

2 The report worries that if a city is created it will
3 cause increase in crime. Of course it will -- stealing
4 sagebrush is not very profitable. It will also increase the
5 noise, but not necessarily to the level of any of our existing
6 towns. Are we trying to make the projected town so perfect,
7 with so many rules and regulations, that no one will be able
8 to live there? Do any of your towns have these regulations?

9 A 32-page description of the environment of the
10 Colorado tracks can best be summed up by saying these are
11 areas not inhabited by man and have not even attracted him
12 for any other reason than the development of an energy resource
13 except for a limited number of hunters for a limited number of
14 days. Let us look at hunting.

15 The report worries about the mule deer. Why are
16 the mule deer so protected most of the year and then left to
17 hunters to kill and wound? An average of 9,000 deers (sic)
18 are killed and as many as 1,500 are left wounded each year.
19 What is the rationale? If we want to protect them, stop
20 hunting. If you want to continue hunting, make an environmental
21 impact study of the hunting season. This is required by the
22 National Environment Policy Act.

23 In Aspen we have a large herd of elk that comes
24 back to our ranch every year. We also have ducks, deer,
25 rign-tailed foxes and boyotes. W^E don't disturb them. Our
house doesn't disburb them. They are friendly because we are.

1 The presence of wildlife depend more on the attitude of the
2 human than on his activity. I can bisualize a herd of deer
3 grazing in sight of an oil shale plant, provided that they
4 don't permit hunting and particularly if some more palatable
5 forage than sagebrush is made available.

6 I would also like to ask if there is more reason
7 to worry about the accidental release of saline water than of
8 radio active material from the Rio Blanco and Rulison Projects
9 which have Government approval?

10 Some of us may die in the near future from lack of
11 fuel, lack of power, and from thinking and talking about
12 lack -- lack -- lack. Until it becomes a way of life. What
13 are we so worried about? Here is an industry that can be
14 stopped at any moment, unlike the projected Rio Blanco or
15 Rulison nuclear explosions.

16 Let us think about what we'll gain from it. The
17 report says production of 100,000 barrels of oil a day would
18 only disturb 1,800 acres. That's 730,000,000 barrels of oil
19 in 20 years for disturbing 1,800 acres. Why say disturbed?
20 Why not think utilize for the benefit of the people? The
21 oil would be worth at least \$2-billion.

22 Where does much of this money go? Through taxation
23 it will build hospitals, schools, churches, playgrounds, and
24 do much to enhance the envirmment. That is, if we don't
25 throw up our hands in despair and say we are not competent

1 to improve the land. What schools and hospitals are adequately
2 funded in your districts?

3 Oil experts say that in ten years Saudi Arabia will
4 own 85 percent of the oil in the world unless we develop our
5 own resources. I don't want to find us dependent on a foreign
6 country for energy, do you?

7 Let's start thinking positively about this area.
8 What we'll gain from it, what we'll give to it, what we'll
9 add to it, and how we'll improve it. That's how we started
10 our country; that's how we became great. We have been given
11 a gift. Let us use it wisely and courageously for the public
12 benefit.

13 Thank you for your kind attention.

14 JUDGE RAMPTON: Thank you, Mrs. Smith.

15 Joan Nice.

16 MISS NICE: My name is Joan Nice, and I represent
17 the Executive Committee of the Roaring Fork group of the
18 Sierra Club.

19 In Western Colorado we're worried about water.
20 Under the terms of the Colorado River compact, we've promised
21 more than we can give. And we're worried about public lands.
22 From all we've heard about oil shale in the press and in the
23 income tax statement itself, the proposed leasing program
24 may be more than beneficial to all companies than to people.

25 Interior's goal for oil shale development was

1 encouraging initially. They stated that they wanted to
2 provide a new source of energy and provide it, quote, "in a
3 manner that will assure minimum possible impact on the
4 environment." Lately, however, the tone was changed. Now
5 they say that 1,000,000 barrels a day in 1985 justifies a
6 "profound" impact.

7 That impact could affect us personally on the
8 Western Slope. We are told in the Draft Statement that
9 development on public rather than private lands, quote, "will
10 lead to a better evaluation of the water resources, will
11 document causes and effects, and will enable corrective
12 actions to be taken that will mitigate impact on water
13 resources." Why haven't resources, causes, and effects, and
14 corrective actions already been evaluated since we seem to
15 be on the doorstep of development?

16 I have one very specific question to ask. Volume
17 III, Section 5, Page 63 of the impact statement explains:
18 "All constructive activities exclusive of actual mining
19 activities that may cause the creation of new lakes, drainage
20 of existing poinds, diversion of natural drainages, alteration
21 of stream hydraulics, disturbance of areas of stream beds
22 or degradation of land and water quality, or adversely
23 affecting the environmental integrity of the area are prohibited
24 unless approved in writing by the mining supervisors," unquote.
25 Wouldn't this kind of power be safer in the hands of a

1 committee that includes industry, government and citizens?

2 The impact statement does a fairly good job of
3 listing general adverse affects on water. I have to agree
4 that they are profound -- "dams and reservoirs constructed,"
5 "natural streamflow depleted," "1.4 percent increase in salinity
6 in sedimentation," "increased population and sanitary water
7 load," "possible effects on ground water quality."

8 After the problems have been laid before us in only
9 the most general terms, we are given nothing but promises of
10 monitoring and prompt action as soon as the impact becomes
11 apparent.

12 I can only conclude that Interior is taking hasty
13 action in this matter, that they are conducting a huge
14 experiment on the land, and that where this experiment fails
15 the public stands to suffer.

16 It's said that we will reap the benefits; that
17 with proper development now our appetites for electrical
18 power in the future will be satisfied. But I think we've
19 been misunderstood. We're looking for ways to control those
20 appetites, to release ourselves from excessive consumption.
21 Therefore, the quick phrase, the energy crisis, is no
22 justification for the development of the Piceance now. If
23 we must be dramatic about it, you might say we've discovered
24 the environmental crisis. Our dedication to the environment
25 at this juncture could make the energy crisis obsolete.

1 Thank you.

2 JUDGE RAMPTON: Thank you.

3 James Smith?

4 MR. SMITH: Mr. Chairman, members of the panel,
5 ladies and gentlemen. My name is J. H. Smith, Jr. I live
6 in Aspen, Colorado. I've been up there for about 25 years,
7 and for 18 years or so I've been studying and working on the
8 problems of the Piceance Basin.

9 A discussion of the report means we must look ahead
10 to about 1985 -- 13, say, years from now. By then our
11 population will have expanded to 237-million people, some
12 28-million new people. Our energy consumption will have
13 increased by a far larger percentage.

14 Let us agree that we are not going to shift these
15 people out of the country and that we cannot accept more
16 people to live in a given area without the changing of
17 characteristics to some extent.

18 This means somewhere in the U. S. we are going to
19 build the equivalent of 560 new towns of 50,000 people each.
20 The report indicates that you cannot do this -- accommodate
21 people in these numbers in a new community without downgrading
22 the environment. This is precisely the point that I wish to
23 challenge. We not only can do the job, but we also have to
24 do it. In my opinion much of this report, even though we
25 attempt to cut it down from its presently rapidly accelerating

1 use, let's say, reflects a defeatism that cannot be accepted
2 if we and succeeding generations are to survive. The report
3 indicates that we have learned nothing and that we cannot or
4 will not improve our future performance. It indicates that
5 if we are allowed to build a new town we will do no better
6 than duplicate the noise, the smog, the smells, the visual
7 tracks, the traffic tie ups of our present cities.

8 I do not believe this is so. Thanks to many great
9 people -- Fairfield Osborn, Louis Bromfield, Rachel Carson,
10 Margaret Sanger, and others who for a half-century have been
11 warning us about our disregard for the sensitivity of the
12 limitations of our natural resources -- we have learned a
13 lot. These people did not say, "Stop everything." They
14 said, "Act intelligently." This is our responsibility today.

15 Thanks to other great people -- Buckminster Fuller,
16 Doxiades, Niemeyer, Solari, and others, we have probed new
17 methods of providing shelter for man and there is no reason
18 to believe we cannot get on with further development.

19 Thanks to great land developers we have seen new
20 towns created which optimize the interaction of man and
21 nature. I think of Tapiola in Finland, Brazilia in Brazil,
22 and Columbia here in our U. S. A. The creators of these
23 communities were responsible for major changes in the concept
24 of land-use planning, yet today they would say they were
25 only on the threshold of what can be done to fit man into

1 nature or to have nature enhance man, whichever way you wish
2 to look at it.

3 In the same time frame, from now till 1985 this
4 country's potential labor force will increase by some
5 20-million and boys, well-educated, physically fit, and ready
6 to meet a challenge if we don't present them with a picture
7 of defeatism and despair.

8 Today about 58 percent of our 209-million people
9 are urban. At least 58 percent of the up-coming 2-million
10 will be urban -- the urban environment is the choice of those
11 who have a choice; is a necessity for all of those who haven't
12 the resources to live elsewhere. So approximately 12-million
13 will be added to payrolls in urban areas unless we do something
14 now it will be mainly in today's urban sprawl.

15 How can we fail to meet the challenge to create
16 new, properly designed towns? The economists are saying we
17 cannot afford to do it because of dollars. The new ecologists
18 saying we cannot do it because it will disturb the mule deer
19 and the wild horses, and will mow down some greasewood and
20 sagebrush.

21 I cannot believe that our values have become this
22 distorted. We have a Highway Trust Fund with an income of
23 several billion dollars a year, and about a 4-billion dollar
24 surplus in the bank, just to build 70-mile-an-hour highways.
25 We have a multi-billion dollar space program. We spend

several billions of dollars a year on cosmetics and candies. Yet we say we cannot tackle the job of creating communities which provide our citizens with a livable environment.

On the ecology side, I cannot believe that anyone can seriously say that 10,000 acres of sagebrush is important. The recommended treatment for sagebrush in modern range management includes razing, ripping, rolling, scraping, scrubbing, mowing, flooding, burning -- if you get the picture. It's a water thief, and its presence, in my opinion, is an indication of neglect of the land. If its importance as browse for animals, it is only so as a last resort. However, I'd be glad to talk to any sage enthusiast, and maybe I'll learn something new. I would like to know why BLM's income from this type of land is four cents an acre per year.

More seriously, I believe that those who testify on matters of national importance such as this must be more than emotional and indicate what they are doing, not just proposing, to avoid the dangers or to bring about the improvements they forecast.

So the burden on me is to indicate why I believe this can be done well. Almost 20 years ago it became apparent to a number of people, including myself, that if oil shale were as important as the Government said it was, then the matter of land use planning for industry, and particularly for the new population, was being neglected. Cornell University

1 was consulted, and due largely to the generosity and enthusiasm
2 of the Department of City Planning, the Cornell professors
3 and graduate students led by Professor Edmondson, the area
4 was studied and a community was planned.

5 Almost 40 people with a great variety of expertise
6 worked on this. They didn't throw up their hands in despair.
7 Here is what they said in their final report of 1958. "Un-
8 bridled by the usual restrictions of an existing pattern and
9 the incorrigible mistakes of lack of planning in the past,
10 it is clearly our duty to design the country's most modern
11 city. It must be so planned that it will enhance the land
12 rather than become a blot on the countryside." "The site
13 is both a stimulation to the imagination and a challenge to
14 the capability to the planners."

15 This group spent over 5,000 mandays in the field
16 and on the job, far more than all the witnesses at these
17 hearings have spent in the Piceance Basin. They were not
18 defeated. They looked at this as a great opportunity to
19 demonstrate man's increasing competence.

20 Shortly after this the University of Denver, through
21 its Research Institutes made a study in depth of the economic
22 significance of the forthcoming industry. This made it clear
23 that the funding -- the financing -- of a "most modern city"
24 was possible because of the dollars that would be generated
25 by the industry and which could be used to do the job properly.

1 Only one thing was lacking; the largest land owner and the
2 influential authority in the area were not participating in
3 the studies and plans.

4 So, in January, 1964, letters were addressed to
5 these authorities by a group of long-time residents and land
6 owners in Garfield County. I quote in part: "This association,
7 which includes members who have worked for many years on the
8 planning of a suitable community for the industry, urges that
9 the Federal Government, as the major land owner in the area,
10 give attention to a program for the orderly development of a
11 community which will be required to support the shale industry.

12 "Much Federal and private money is being spent today
13 to irradicate slums and rebuild areas which were hastily or
14 unwisely planned. In this instance the opportunity to plan
15 well in advance exists and should be taken. Rarely is there
16 a chance to design and build a residential and industrial
17 center from scratch, using the great theoretical knowledge
18 that has been accumulated, without being inhibited by existing
19 structures, utilities, et cetera."

20 I continue to quote: "A handful of private owners
21 however, cannot do this without knowledge of the plans of the
22 largest owner, the Federal Government -- or without aid and
23 advice from Government agencies in their normal course of
24 duty. Many problems go beyond municipal, county, and state
25 boundaries," as Mr. Cooley mentioned earlier. "The location

1 of the intercontinental highway and other communication and
2 transportation systems, the general development of the river
3 basin, the pollution of air and water, et cetera, are examples.
4 Of particular importance is the quantity and quality of water,
5 and it must be noted that despite many statements in water
6 policy and water legislation that sufficient supplies will
7 be kept available for the development, the supply is, in fact,
8 constantly being committed elsewhere.

9 I continue to quote: "We would like to emphasize
10 that we are not seeking any special aid -- this project will
11 not develop unless it proves its own economic feasibility --
12 but we would like to know what the activity of the various
13 branches of the Federal Government will be, and we will be
14 glad to apprise them of our plan.

15 "Finally, on the matter of community development,
16 one need only look at some of the ravaged hillsides in
17 Colorado to get some idea of what could happen in an area
18 where the mining will be indefinitely more intense and longer-
19 lasting. On the other hand, it takes little imagination
20 what could be done with this magnificent topography around
21 the oil shale lands, given time to prepare. Elsewhere most
22 of our existing urban centers are being redone at great
23 expense; here the most modern concepts of a community can
24 be applied from scratch to develop in Colorado a show place
25 comparable to the greatest of recent urban projects. It is

1 believed that our thinking should be geared to a new dimension,
2 because this venture cannot be successful without being very
3 big and, therefore, it is able to accept the challenge of
4 breaking traditional Topsy-like growth and ultimate decay of
5 the Colorado mining town."

6 I continue to quote: "With this in mind, several
7 of our associates have been concerned in preparing a phased
8 development plan for the area, and the recent applications
9 for land by various industrial companies has led us to accelerate
10 this effort. We seek no funds but do solicit the continued
11 interest of your office and the appropriate agencies of the
12 State. We will use our best efforts to expedite the arrival
13 of a shale industry and to provide its personnel with an
14 environment which the state can be proud."

15 These letters, written eight years ago, received no
16 reply. They were to the Secretary of Interior and to the
17 Governor of Colorado. Two years later, however, because of
18 availability of Housing Act Funds, it was possible for a team
19 of faculty members of the University of Colorado to undertake
20 a study of the Western Mountain Region of Colorado, including
21 the significance of oil shale. Since then the counties
22 involved have moved ahead with planning. A regional organization
23 has been set up. And again Mr. Cooley has discussed that
24 already. In the last two years at least 40 studies have been
25 made by individuals and organizations on oil shale and its

1 implications. In addition, and fortunately, some people
2 have done hard, practical work to test out processes of
3 production, revegetation, et cetera.

4 However, despite warnings in the above-mentioned
5 letters eight years ago and from more expert people, such as
6 Northcutt Ely of Washington, six years ago, the Federal
7 Government and the State have done little to assure the
8 quality and quantity of water needed to unlock this national
9 resource. I stress quality now, as I always have, because
10 quantity of water is meaningless unless you know it is
11 usable. The water now being delivered to Los Angeles, San
12 Diego, Mexico, from the Colorado River by contract is below
13 the Public Health Standards now today without any industry
14 on the Western Slope. The salinity occurs, however, beyond
15 the borders of the State of Colorado. Our highest quality
16 water is being diverted from high altitudes, western water
17 sheds, to the eastern slope to raise the standard of their
18 water as well as increase the quantity. Where is the
19 environmental impact statement that justifies this? What
20 Interior s report says is that we should quietly sit by and
21 let someone else degrade our water by diversion. I suggest
22 that we stop diversion in order to permit a reasonable
23 amount of national interest industry on this slope.

24 I use the term national interest industry intentionally.
25 We are not now talking of an industry of local importance.

1 If oil shale is useful at all, it will have country-wide
2 benefits. It goes to the heart of our serious balance of
3 payments problem. A deficit from energy alone which will
4 amount to as much as \$25-billion a year in 1985. It goes to
5 the heart of our posture in the world scene. Can we supply
6 ourselves, or are we to wait in line at the door of some of
7 the new major producing countries? It goes to the heart of
8 our future life style. How much are we going to have to
9 cut our per capita energy consumption? 10 per cent or 20
10 percent probably would do us some good. 30 percent might
11 cause real hardship. What will we pay for crude oil? \$5.00,
12 \$6.00, \$7.00?

13 This is a very serious problem. I offer my answer.
14 Get on with a definitive prototype program at once and see
15 what actually happens with one or more large plants. You can
16 always stop a shovel in mid-air or mid-shale. It is not like
17 Rulison or Rio Blanco which threaten us because you cannot
18 stop radioactivity once started. Pay attention to all of
19 these reports and warnings that have been issued. Be alert
20 and apply our vast accumulated knowledge to the problems
21 already foreseen and be willing to face unforeseen problems
22 while we now have the time to solve them.

23 If we do not have the courage to do this now -- and
24 by we I don't mean the Department of Interior alone; I mean
25 the full force of the Government -- the Federal Government

1 should stop talking and theorizing about oil shale as a
2 national asset. It should retract the recent statement that
3 there are 80-billion barrels oil available in "them thar
4 mountains" and let the Piceance Basin seek its own destiny
5 in non-federal activities.

6 Thank you very much for your patience and attention.

7 JUDGE RAMPTON: Thank you, Mr. Smith.

8 It's now twelve o'clock. The purpose of this
9 hearing is to obtain information on the -- and comments on
10 the environmental Impact Statement, and it's also for your
11 convenience. And therefore, I propose at this time to ask
12 those present whether or not they would like to continue
13 through the lunch hour and possibly be through by one o'clock
14 since we have about six or seven participants, or come back
15 at one o'clock. All in favor of the first -- would I get
16 a show of hands of continuing through the lunch hour? All
17 right, let's take the second. I believe the first proposition
18 is carried, and we will take a ten-minute recess and then
19 come back at ten minutes after twelve and continue this
20 hearing to its conclusion.

21 (Whereupon, a short recess was taken.)

22 JUDGE RAMPTON: The hearing will come to order.

23 Resume your seats, please.

24 The next participant I have on my list is Mr.
25 Fischer, Colorado River Water Conservation District.

1 MR. FISCHER: Mr. Chairman, members of the panel,
2 ladies and gentlemen. My name is Roland Fischer, secretary-
3 engineer, The Colorado River Water Conservation District in
4 Glenwood Springs, Colorado. The District is the primary
5 western Colorado water policy body, including all of 12 and
6 parts of three more counties. Its area is 29,000 square
7 miles, encompassing the principal headquarters of the
8 Colorado River. The 15-member Board of Directors is appointed
9 by the respective Boards of County Commissioners.

10 Mr. Chairman, to further identify the District,
11 included are two maps, one showing directors and their counties,
12 and the other showing ranges.

13 These comments have been prepared by me and general
14 counsel, Mr. Kenneth Balcomb of the firm of Delany & Balcomb
15 of Glenwood Springs, Colorado. They are staff comments to
16 the extent that they have not been specifically approved by
17 the Board, although the Board has directed that comments or
18 testimony be presented at this meeting. The Board will meet
19 October 17, 1972, Mr. Chairman for its Fourth Regular Quarterly
20 meeting of 1972, and after that meeting additional, more
21 detailed comments will be presented.

22 Because the three volumes of the Draft Environmental
23 Statement for the proposed prototype oil shale leasing programs
24 run to many hundreds of pages and the material is both voluminous
25 and comprehensive, I at this time ask for an extension of the

1 time in which to submit the District's additional comments.
2 You have spoken to the point. I request an extension to
3 November 30th.

4 In addition to the large volume of material in the
5 Draft Statement itself, a fairly large volume of additional
6 material must be reviewed for our additional comments. However,
7 I would at this time like to make these preliminary comments,
8 and unless specifically cited all references are to Volume I
9 of the Draft Environmental Statement for the proposed prototype
10 oil shale leasing program.

11 Concerning water supply, Page II-20, there's references
12 to the Colorado River Basin Project Hearings, quote, "Hearings
13 before the Subcommittee on Irrigation and Reclamation of the
14 Committee on Interior and Insular Affairs, House of Representa-
15 tives, 90th Congress, 2nd Session, on HR 3300 and S 1004,
16 January 30, 1968 to February 2, 1968." This document is
17 identified as Serial 90-5.

18 Page II-20 of the text includes the statement, quote,
19 "This assumes that the Upper Colorado River Basin states are
20 to supply one-half of the Mexican Treaty obligation, or
21 750,000 acre feet a year." However, in Serial 905, then
22 Secretary of Interior Udall testified at Page 700, quote,
23 "Also influencing our judgment is the uncertainty as to
24 whether the Upper Basin is obligated to meet any of the
25 Mexican Treaty water deficiencies."

1 At this time, to my knowledge, neither the State
2 of Colorado or the Upper Basin states have acknowledged any
3 obligation to the Mexican Treaty, and we request the above
4 reference to an Upper Basin Treaty obligation be stricken from
5 the final report.

6 Also in Serial 905 we find Mr. Aspinall's comments
7 on water supply, Pages 748 and 749. The list of depletions
8 on authorized Federal projects and possible depletions totals
9 2,992,000 acre feet per year. Certainly some of these
10 depletions would be for projects that include oil shale water.

11 But Table 2 of Volume I at Page II-21 shows Colorado's
12 total allocated share as 2,976,000 acre feet of water annually,
13 and quote, "total water that could be made available for
14 depletion for oil shale development" as 159,000 acre feet
15 annually. The water supply figures shown in Volume I may
16 not accurately reflect the water supply picture and the basic
17 data upon which they are calculated should be discussed.

18 Of the 159,000 acre feet shown available for
19 depletion oil shale development in Colorado, 147,000 acre
20 feet would appear to come from Green Mountain and Ruedi
21 Reservoirs and the West Divide Project. I estimate that
22 perhaps 70,000 acre feet of that would come from the two
23 reservoirs. At this point in time there is no certainty as
24 to the availability of oil shale water from those two
25 reservoirs. This is not to imply that it will or will not

1 be available, but pending questions surrounding them must
2 be resolved.

3 Mr. Chairman, the Secretary of the Interior has
4 been contacted on this question, and we would expect to meet
5 with him -- with his staff in the very near future. The
6 State Engineer of Colorado is also involved.

7 There is no mention of the requirement in PL 90-537
8 that the West Divide and the four other western Colorado
9 projects in that bill must deliver water at the same time as
10 the Central Arizona Project. Central Arizona is under
11 construction. West Divide is not. If an oil shale industry
12 is to rely upon the West Divide project, we urge the final
13 report include specific language that West Divide must
14 deliver water simultaneous with the Central Arizona project.

15 Concerning water and availability, some calculations
16 by this District show a difference as to the amount of water
17 available to the State of Colorado from the Upper Colorado
18 River Basin water resources. The difference may not appear
19 to be great -- it's about 120,000 acre feet a year; that is,
20 2,976,000 acre feet in the Draft Report versus 2,856,000
21 calculated by this District. But the differences do compound.

22 Reservoir evaporation assignable to Colorado is
23 realistically 200,000 acre feet a year, not 342,000 acre
24 feet as shown on Page II-21. Additionally, the Glen Canyon
25 operating criteria promulgated by the Secretary of Interior

1 in 1970 may be placing an unjustified burden upon Upper
2 Basin Water resources, and a re-evaluation of water resources
3 in the Draft report may be in order.

4 The Draft Statement on Page II-20 estimated 5.8
5 million acre feet per year available to the Upper Basin. This
6 figure may not be realistic. Using the virgin flow of the
7 Colorado River for the period 1922 to 1970 and the present
8 operation criteria as promulgated by the Secretary of Interior,
9 the amount of water available to the Upper Basin may probably
10 be more nearly 5,570,000 acre feet per year.

11 The Draft Environmental Statement implicitly does
12 not take into consideration other possible uses of Colorado's
13 compact allocated share of Colorado River Basin water. Many
14 of these other uses have been decreed. This is not to imply
15 that oil shale will not be the dominant or even sole user
16 of Colorado's remaining share of Colorado River water; however,
17 these other uses have apparently not been considered even
18 though they are decreed, and some accommodation of these
19 decrees is going to have to be reached.

20 It is uncertain from the Draft Statement how much
21 water would be required to support an oil shale industry and
22 how much water is available. For instance, Table 2 on Page
23 II-21 implies 159,000 acre feet a year if Colorado resources
24 are to be committed to an oil shale industry. From the Table
25 this appears to be all of Colorado's remaining water.

On Page 7-5 under the heading "Irreversible and Irretrievable Commitment of Resources," Paragraph c, we find the statement "From 80,000 to 125,000 acre feet per year of surface or underground water could be used to support the water requirements for a one-million barrel per day industry, and supporting population. Part of this water would be diverted from Colorado, White and Green Rivers, and would not be available for other as yet unspecified water needs," close quote. The facts are many of these other water needs are specified and they are decreed in the State Courts. The United States itself has claimed 200,000 acre feet of water for oil shale purposes in the Division 5 water court and the Draft Statement does not mention the government claim.

The Department of Interior Bureau of Reclamation recently released for comment two proposed reports dealing with the proposed Yellow Jacket Project in the Yampa and White -- the Yampa is a tributary of the Green -- River Basins. The reports are the proposed Draft Environmental Statement, Yellow Jacket Project, Colorado, and the proposed Yellow Jacket Project, Colorado feasibility report. The Project would develop approximately 101,580 acre feet of water annually. Approximately 71,500 acre feet of this would be for industrial use in the development of the oil shale and coal and for municipal and domestic uses of the population -- the population increases expected to accompany industrial

1 development. And it is not clear from the Draft Statement
2 if the 71,500 acre feet of Yellow Jacket water has been
3 considered or not.

4 Further, I'd like to suggest that the Draft Statement
5 does not clearly set out the difference between anticipated
6 diversion and consumption requirements, and this difference
7 must be clarified.

8 Concerning dissolved solids, in directing itself
9 to the subject of salinity or concerning salinity or dissolved
10 solids, the report appears to direct itself only to the
11 concentrating defects of the diversions of fairly high quality
12 water from the surface streams to an oil shale industry. But
13 it's unclear from the report what the effect on surface water
14 salinity will be as a result of sewage plant effluent from the
15 increased population and from other salt-loading sources.

16 The emphasis in this report, as in nearly every
17 Federal Environmental Statement dealing with the Colorado
18 River Basin is on the effect of increased salinity of Hoover
19 Dam or some other point in the Lower Basin. I suggest that
20 in the final environmental draft statement there be included
21 a quote from the Bureau of Reclamation document Colorado
22 River Water Quality Improvement Program, 1972. The statement
23 to be included appears in the Forward on Page ii. It is as
24 follows, quote: "The objective of the program is to maintain
25 salinity concentrations at or below levels presently found

1 in the lower main stem of the Colorado River. In implementing
2 this objective, the salinity problem will be treated as a
3 basin-wide problem, recognizing that salinity levels may
4 rise until control measures are made effective while the
5 Upper Basin continues to develop its compact apportioned
6 waters."

7 Mr. Chairman, thank you for the opportunity to
8 comment.

9 JUDGE RAMPTON: Thank you, Mr. Fischer.

10 Doctor Gerald Wood.

11 DOCTOR WOOD: I am Dr. Gerald P. Wood, director
12 of the Air Pollution Control Division of the Colorado Department
13 of Health. I am responsible for the implementation of the
14 plans and regulations developed by the Air Pollution Control
15 Commission of the State of Colorado under the Colorado Air
16 Pollution Control Act of 1970, and Chapter 66, Article 31,
17 of the Statutes of State of Colorado.

18 I wish at this time to place in evidence the approved
19 Air Quality Implementation Plan for the State of Colorado.
20 This large blue book here (indicating). This was submitted
21 on January 26th, 1972, by Governor Love to, and accepted by,
22 the Federal Environmental Protection Agency with legislative
23 recommendations which have no relation to the body of the
24 plan. This document obviously not available to the planners
25 of the Department of the Interior.

1 The Air Pollution Control Commission's regulation
2 No. 3, which is that concerning permits to construct and
3 operate new machinery under the authority of Chapter 66-31-12
4 of the Colorado Air Pollution Control Act states in part, under
5 Paragraph IID and IIIG, the Division can only issue such permits
6 to construct or operate machinery that will not conflict
7 with Federal, State, or local emission control regulations or
8 ambient air quality standards.

9 The Commission has expressed the opinion that they
10 will not knowingly allow any machinery to open up under a
11 variance from standards of emission or ambience air quality.

12 The Division does not see the type of attention to
13 detail in the environmental statement, and it expresses
14 surprise that, in a statement of this magnitude, requiring
15 a great deal of intergovernmental exchange, they have not
16 been consulted. The Division was required to buy its copy
17 of the statement and it believes that this type of disregard
18 of normal planning mechanisms can lead to grave misunderstanding
19 of the intentions and policies of the Department of Health
20 and the Air Pollution Control Commission. There is a grave
21 danger of negation of the valuable services rendered in
22 preparation of this statement and requirement of duplication
23 at considerable expense to the taxpayer, whose pocket is
24 not bottomless.

25 The economics of labor being what they are, it is

1 certain that the most modern machines controlled by machines
2 will have to be used and this means small work forces of
3 highly skilled and educated men, apart from the relatively
4 small amount of roughlabor that can be locally supplied.
5 Until the whole region is opened up it is doubtful if there
6 will a great difference in the life style of the area.

7 The proposed refinery would have to consider a
8 totally enclosed and aspirated system of material handling
9 and, the retorting operation inclusive, would have to be
10 prepared to use filtration of the quality of the systems
11 used in the new collectors at the Four Corners power plant,
12 such as Venturi scrubbers at 40-60" pressure drop, or if
13 equivilant.

14 We have noted that in the non-designated areas
15 of States, the ambient air quality standard for particulate
16 is 45 micromilligrams per cubin meter; and, therefore, in this
17 area a ground level concentration increment of 15 micromilligrams
18 would be too much. The degree of control for several plants
19 are in the valley is at the limit of modern technology.

20 I have a further statement prepared by the Air
21 Pollution Control yesterday, Your Honor.

22 JUDGE RAMPTON: Yes. That was to be delivered by
23 Mr. Kirkpatrick?

24 DR. WOOD: Yes, it was.

25 JUDGE RAMPTON: He's not present, so you will give
that statement?

1 DR. WOOD: Yes.

2 JUDGE RAMPTON: All right, proceed.

3 DR. WOOD: The Colorado Air Pollution Control
4 Commission has asked me to render its statement which follows:

5 1. The Commission staff is in the process of
6 developing plans and strategies for hydrocarbon control that
7 will involve new regulations.

8 2. The specific regulations for oil shale and coal
9 gasification processes to control their emissions are under
10 research at this time, and this matter will be considered at
11 the appropriate time.

12 3. The Commission is aware of the Governor's charge
13 that industry must meet the standards of emission and air
14 quality which are current at the time of construction of these
15 plants, and the Commission will take the necessary steps to
16 support this charge.

17 4. The Commission draws the attention of the
18 Department of the Interior to the National Environmental Act,
19 Section 102, which requires review of environmental statements
20 with appropriate state and local agencies. We received no
21 such statement and would appreciate liaison in future
22 statements.

23 5. The Commission thanks the Department for the
24 opportunity to make their position clear, even at this date.

25 JUDGE RAMPTON: Thank you, Dr. Wood.

1 DR. WOOD: Any questions?

2 JUDGE RAMPTON: None.

3 DR. WOOD: Thank you.

4 JUDGE RAMPTON: Mr. Ron Gitchell of the Meeker,
5 Colorado, Council.

6 MR. GITCHELL: Mr. Chairman, members of the panel,
7 ladies and gentlemen. I'm Ron Gitchell from Meeker, Colorado.
8 I'm a member of the executive board of the Big Country
9 Headquarters RC&D. I'm a member of the Meeker Chamber of
10 Commerce, the Meeker Town Planning Commission, and a duly
11 elected councilman for the town. I'm also a professional
12 engineer. Both the Meeker Town Council and the Chamber of
13 Commerce have asked me to deliver before this hearing our
14 hurriedly gathered comments regarding the Draft Environmental
15 Statement.

16 First, neither the Meeker Town Council nor the
17 Meeker Chamber of Commerce were aware of the availability of
18 the hearing until Monday, October 2nd. I was not able to
19 obtain a copy of the Draft until Monday of this week, October
20 9th. And herein lays our joint complaint: Meeker is going
21 to be one of the major hubs of activity in the currently
22 proposed oil shale development project.

23 In all three volumes, under the heading of Comments
24 Requested, we find listed such units as The Colorado Open
25 Space Council, Sierra Club, Wilderness Society, Izaak Walton

1 League, Friends of the Earth, and such oil companies as
2 Phelps, Shell, Superior, Cameron, Sun, Western, Union --just
3 to name a few. But we find no mention of requesting comments
4 from Meeker or Rangley -- towns who are to feel a direct
5 immediate impact from any activity concerning the development
6 of oil shale. For the Friends of the Earth or the Sierra
7 Club's comments to be sought out or considered more important
8 than that of the Towns of Meeker and Rangely, both of which
9 sit right in the middle of all this development, is just
10 beyond our comprehension. When the Federal Government ignores
11 local government and when private organizations seem to take
12 precedence over local government, you will find us, the elected
13 local officials, becoming more irate than we already are over
14 federal intervention into our local affairs. To make matters
15 worse, the Council noted that the list of Comments Requested
16 doesn't even include the Rio Blanco County Commissioners or
17 the Rio Blanco County Planning Commission while better than
18 80 percent of the best oil shale lays inside Rio Blanco County.

19 Now, I just breezed through the engineering portions
20 of the documentation. Suffice it to say that the oil shale
21 industry is more qualified to support or reject the engineering
22 aspects of the Draft Environmental Statement.

23 We, the officials and businessmen of Meeker, feel
24 that private industry must be allowed to develop this unique
25 resource called oil shale. If they don't, we feel that the

1 Federal Government will create another AMTRAK and start
2 digging away without regard to us or our local environment.
3 That is to say, if we don't, Congress will, for this nation's
4 energy crisis is the reality of today. We simply do not
5 have enough energy for this nation to continue to run on,
6 and the deficit, like the national debt, grows larger every
7 day.

8 I've said it before, and I'd like to emphasize it
9 again today. 8-million people live in Los Angeles County;
10 less than 5-thousand live in Rio Blanco County. Rio Blanco
11 County has only one Congressman in Washington; Los Angeles
12 County has 17. The City of Los Angeles has more people in it
13 than we have in the entire State of Colorado. This is where
14 the balance of power lays in any struggle over our resources.
15 Nation-wide we're outnumbered by better than 200-thousand to
16 one.

17 Some people and groups will tell us that we cannot
18 allow the development of oil shale, but the responsible rightly
19 conclude that this development is imminent and that we must
20 proceed. But we are going to keep an eye upon our environment
21 to make sure the impact is an minimal as today's technology
22 will allow. And we'll all have to keep updating this technology
23 as we go along.

24 One of the areas of major concern is the disposal
25 of the spent shale. Some weeks ago some of us had the privilege

1 of touring the Colony Oil Shale Pilot Plant in Parachute
2 Creek. There we stood upon the spent shale revegetation test
3 plots and reeled at the conclusion that spent shale is highly
4 toxic. And that some of these toxic components are significantly
5 water-soluble. The leaching of these soluble components is
6 a viable major problem in both site location for the spent
7 shale and in revegetation.

8 We personally witnessed the Forestry Service
9 revegetation test plots as almost utterly bare, crusted with
10 white surface slats, leached from the spent shale beneath.
11 This project concluded that without considerable care, natural
12 revegetation and surface rehabilitation does not occur. This
13 land would then be irretrievable to future generations.

14 I see no sense in kidding ourselves. The current
15 direction of this nation demands the development of the oil
16 shale resource. Revegetation is one of the most major
17 problems facing the industry and us, the residents. For
18 long after industry has left Piceance, we'll be left with
19 the spent shale tailings. We feel that some long-range
20 method must be made to guarantee to us that the revegetation
21 left behind after the industry is gone is monitored until it
22 is satisfactorily proven that nature has reclaimed the dump
23 sites and that the natural cycle of revegetation has taken
24 over, if this ever actually occurs.

25 This is a problem that must be worried about at the

1 beginning and not left to our great-grandchildren to resolve
2 just because they may have the great technology that we do
3 not possess today. True, we're looking at the termination
4 of a project that may well last 150 years. But if we don't
5 worry about the problems today, our grandchildren may find
6 the problem too monumental to solve in the future. The
7 ultimate protection of the environment of Piceance in the
8 year 2122 must start with us here today. These problems
9 outlined cannot be hand-me-downs to future generations. We
10 are victims of that philosophy ourselves.

11 Many of us seem to be terror-stricken at the
12 quantities of water mentioned within the Draft Environmental
13 Statement as being necessary for the production of oil shale.
14 These quantities almost equal all the water that flows through
15 the Town of Meeker in the WhiteRiver on an annual basis.
16 That is a lot of water. Between the Eastern Slope and oil
17 shale, there's not going to be much water left.

18 Now, there are statements within the Draft that
19 would, and do, generally tend to lead the reader to conclude
20 that the area really isn't worth much. Phrases like "semi-
21 wilderness" and quote "The slopes and many upland areas
22 commonly expose bare rock cliffs, and ledges with little or
23 no soil development. Other gently sloping upland areas
24 contain this poorly developed soil." And, "Locally playa
25 lake areas are covered by a salt pan where no vegetation grows.

1 And, "On the higher ground of the Roan Plateau in Colorado
2 and Utah there are restricted areas of Douglas Fir and aspen
3 forrest growth." And still further, "For the most part, however,
4 the terrain within the oil shale basins offers a gently rolling
5 hill or flat plain view that has attracted little attention
6 aesthetically," unquote.

7 These statements are misleading. The hunters and
8 visitors that I've escorted into the Piceance Basin have
9 expressed the awe at the aesthetic beauty of the region. And
10 a big city slicker from Los Angeles, like me, thinks the
11 Piceance Basin is pretty close to heaven when you compare it
12 with skyscrapers, wall-to-wall houses, concrete canyons,
13 smog, and people pollution. The only reason the Basin hasn't
14 attracted any aesthetic appreciation is that there is no
15 major thoroughfare within the Basin itself. It's off the
16 beaten track -- or it used to be, until oil shale.

17 Further on in the Draft I ran across a statement,
18 "However, there is some hunting of deer, antelope, and game
19 birds within the oil shale region itself." The fact is that
20 the Piceance Basin is habitat for the largest migratory herd
21 of mule deer in the entire United States. Last year alone
22 some 5,500 deer were harvested by hunters from this region.
23 The only reason the figure wasn't larger is a lack of knowledge
24 by out-of-state hunters on the quantities of deer harbored in
25 the Basin during the season.

1 More specifically, in Volume I, Chapter II, on
2 Pages 75 and 76, under the heading of Wildlife and Fish
3 Resources, we find no mention of the fish resource within
4 the locale. I hope this is just an error that will be
5 corrected in the final draft. There may not be an over
6 abundance of fish within the Basin, but some of the hearwaters
7 sport the very best game fishing in the western world.

8 Our hunting and fishing are a viable industry to
9 us that we do not want to lose. We can put all our monetary
10 eggs in the one basket of oil shale. Oil shale is here today
11 and will be gone in the future of tomorrow. We must have
12 a diversified economic base from which to operate our
13 communities. If we don't, Meeker and Rangely will become
14 ghost towns when the oil shale boom is over. We don't want
15 this to happen. And, as elected officials, we cannot allow
16 this to happen.

17 And we're going to have to have Federal and state
18 help and the help of the oil shale industry in order to prevent
19 this future occurrence. The first act of prevention should
20 be to make sure that our deer herd and other wildlife, fish,
21 and agricultural resources, remain in tact, wherever possible.
22 For these are the things we are going to have to rely upon
23 for our communities' economic base when the oil shale is
24 gone.

25 One of the saddest things that is going to occur

1 is that the projected open pit mining takes place right in
2 the heart of Game Management Unit No. 22, right in the middle
3 of the mule deer herd. This, unfortunately, is one of the
4 few areas where the shale lays so close to the surface that
5 any other method of mining is totally impractical.

6 On the lighter side, in Volume I, I found the
7 statement, "Some of the country's better ski areas are
8 located near Snowmass, Aspen, and Vail." I seriously
9 question the phrase "Some of the country's better ski areas."
10 Our far eastern and European friends regard this area as one
11 of the best ski areas in the world.

12 Up to now I've been trying to make the point that
13 rather than try and sell oil shale production, the Draft
14 Environmental Statement should address itself to facts rather
15 than indulge in misleading semantics by trying to paint a
16 bleak picture of the oil shale terrain.

17 Now, according to the Draft, there are no historic
18 sites listed for Rio Blanco County in the National Register
19 of Historic Places. True, but the statement is again misleading.
20 The Rio Blanco County Historical Society is rather an infant
21 group which is about to incorporate. There are many sites
22 of historical value within Rio Blanco County, and we are
23 discovering more each year. We've just finished the first
24 major project of compiling a book of Rio Blanco History.
25 There is already sufficient information to write a second

1 volume. All this activity has led to an awakening of the
2 historical places and sites within our County that went
3 unnoticed up to the writing of this first book. Just because
4 the historical sites aren't listed yet is no sign that they
5 don't exist.

6 It just boggles my mind that the production of
7 1-million barrels a day of oil from shale will cause such
8 drastic irreversible consequences upon the nice, quiet town
9 of Meeker, Colorado.

10 In my reading I found a very interesting statement
11 to the effect that the surface disturbance from underground
12 "room and pillar" mining can be identical to that of open pit
13 mining, providing that the oil shale is not put back into the
14 hole. In total, according to the Draft, some 50-thousand
15 acres will be affected in the overall effort to produce
16 1-million barrels of oil from shale each day. Add to this
17 20-thousand irretrievable acres for urban development and
18 10-thousand acres for utilities -- soon we see upwards of
19 80-thousand acres affected by this project. And this does
20 not take into account the development of oil shale on the
21 1-million acres of private oil shale lands.

22 The impact of people pollution, according to the
23 Draft, is just going to be phenomenal. 30-thousand temporary
24 employees by 1977; 47-thousand employees by 1980. And Meeker's
25 water system is now at maximum utilization and with the sewer

1 facilities not too far behind. We've no tax base to stand
2 the cost of updating and increasing these capacities, to meet
3 the needs of an expanding population that the Draft Environmental
4 Statement predicts will be upon us starting this coming spring.

5 This is not to mention that we already have a
6 critical housing shortage in Rio Blanco County to start with.
7 Housing is our most important and immediate problem. So I
8 ask the oil shale industry, when you are in Washington,
9 signing these lease agreements, why don't you send representa-
10 tives of the oil shale industry over to HUD to start action
11 on obtaining some housing start grants for the area? All
12 these workers are going to need houses, and we'd best get
13 started on the task this very coming spring as soon as the
14 weather permits. If we don't, we can never expect to meet
15 the needs of the people associated with the development of
16 the industry.

17 Rather than go on point by point, I can sum up the
18 remainder of our comments in the Draft this way. Throughout
19 the documentation we find a magnificent job of inventorying
20 all the problems and impact that we're going to see for the
21 next 12 or 13 years. But there is sadly lacking any mention
22 of solutions to all these problems.

23 Both the Federal Government and the oil shale
24 industry are going to have to pitch in and hold us, in local
25 government. We need an immediate fund for a paid professional

1 staff for both the town and the Planning Commission, and
2 this is over and above the effort that is being conducted.
3 We have a nice town, and we'd like to keep it that way. But
4 we have insufficient funds and are unable to float sufficient
5 bond issues to meet the demands the Environmental Statement
6 indicates is about to impact upon us. We have plenty of
7 homework to do right in our own backyard, and we'd better
8 get busy.

9 Many people are going to start arriving in our area
10 next spring. What good is a town without adequate water and
11 sewage facilities? What good is an oil shale industry if the
12 workers haven't any place to live or are forced to drive long
13 distances? What about schools for the kids or sufficient
14 police protection? With the coming of this influx of people,
15 the only way to stay on top of the crime problem is to hire
16 more policemen for the force before the actual increase in
17 the population. But again, we don't have the tax base to
18 support the increased police staff.

19 This Draft Environmental Statement is telling us
20 that we, in Rio Blanco County, are facing irreversible,
21 irretrievable affects upon all our resources. That we are
22 facing mandatory organization which is the direct result of
23 the development of the oil shale program. The Draft defined
24 the problems and problem areas for us in rural Meeker and
25 Rangely, and we need men to find solutions before they become

1 a reality, to solve the problem before it becomes actual fact,
2 and this will result in tremendous saving to everyone concerned.
3 To let the problem get out of hand only results in increased
4 taxes, and increased taxes mean increased rentals, increased
5 house payments, and a corresponding demand by the employees
6 of the oil shale industry for an increase in wages to cover the
7 increased local taxes.

8 From what I have read, I conclude that the production
9 costs of oil from shale is already quite marginal, and that
10 a simple 25-cent an hour raise in pay could well wipe out the
11 economic feasibility of competitive production. So, it's a
12 game of ultimate cooperation that we're all going to have
13 to play, and it's the only game in town.

14 I've done my best to cover all three volumes in as
15 much detail as this week would permit. I'd like to make a
16 personal observation; that is, that the title of the Draft
17 is incorrect -- it should be entitled, "Draft Environmental
18 Statement for the Proposed Portotype of Frankenstein's Monster."
19 The Department of Interior must be congratulated. This is
20 indeed a detailed and one of the best Draft Environmental
21 Statements I have ever read, and I've read quite a few. And
22 I assure you, it is without a doubt the horror story of our
23 century. And I am personally very grateful for this therapeutic
24 shock value which it had upon our heretofore quiet community.

25 A question for thought: What would happen to the

1 consumption of petroleum products by automobiles if we put the
2 top speed from 70 to 50 miles per hour?

3 I thank you for the opportunity to present our views.

4 JUDGE RAMPTON: Next is Nyla Kladder of the Audubon
5 Society.

6 MS. KLADDER: Mr. Chairman, panel members. I'm
7 Nyla Kladder, president of the Audubon Society of Western
8 Colorado.

9 There are three points we would like to have
10 considered in the decision as to whether or not to proceed
11 at this time with the proposed plan.

12 Number one, is there a need at present for the oil
13 from these reserves?

14 Number two, would the problems created by the sudden
15 increase in population in these areas offset any economic
16 benefits to the communities involved.

17 Number three, how much actual damage will be done
18 to the environment by these plans?

19 With regard to Item one, is there a need now for
20 the oil from these reserves? We think that a national energy
21 policy should be established in order to better clarify the
22 relationship between needs, demand, production and reserves
23 of various types of energy. Perhaps these reserves could
24 better be used for the production of chemicals. There should
25 be more research into other sources of energy, such as solar

1 power, tidal, nuclear, geothermal, fusion, et cetera. Let's
2 not jump into the development of such an environmentally
3 damaging industry until better recovery methods are developed
4 and environmental problems are more fully investigated.

5 Number two, will the economic benefits be offset by
6 the problems created for the local communities? Will the
7 added source of income to these communities and businessmen
8 be offset by the need for new roads, new schools, additional
9 utility lines, electricity, housing, domestic water and water
10 treatment plants, sewage disposal plants, additional law
11 enforcement problems, et cetera? A sudden influx of population
12 would hamper orderly, high-quality planning and development.
13 When this temporary population has moved on, who is left to
14 pay for this?

15 And, Number three, which we view as the most important,
16 what is the possible damage to the environment in these areas?
17 Not only would the above-mentioned influx of people cause many
18 economic problems, but it could cause considerable damage to
19 the environment and consequently to wildlife. In the Piceance
20 Basin the development of a community with related facilities
21 would not only take up desirable habitat for game animals, but
22 much of the wildlife does not tolerate close association with
23 man.

24 From reports I have read, it is my understanding
25 that the volume of spent shale rock would be as much as two

1 point five times that of the solid rock with this residue
2 being a highly alkaline black dust. The percentage of ore
3 is calculated at 13 percent and waste at 87 percent. This
4 creates a sizable problem in disposal. One source calculated
5 that by 1968 (sic) the six prototype productions could be
6 producing 1,125,000 tons of waste per day, requiring 1,160,000
7 acres per year -- over a 20-year period it might require
8 23,200 acres.

9 Apparently the results of experiments on reestablishing
10 vegetation on these tailings have not been encouraging --
11 requiring much water and fertilizer to promote growth, and
12 tender loving care after it is established. Many of our
13 native species will not even tolerate the tailings, notably
14 Mountain Mahogany and good deer forage.

15 I have read of one proposal to fill in dry canyons
16 with the waste, compacting it with heavy equipment to only
17 130 percent of its original volume. This would require dams
18 below the oil shale terraces to prevent rain from leaching
19 salt into rivers. The water from these dams theoretically
20 can be pumped upstream to be recycled to the plants. But
21 when this operation is over, who will see that the ground
22 cover gets the tender loving care it needs, and who will be
23 responsible for maintenance of the dams and recycling of
24 water? Probably the same people who are trying to figure
25 out how to pay the taxes to cover the other improvements made.

1 We do not say oil shale development should not be,
2 but we think many of these problems should be more thoroughly
3 investigated and further development for the present should
4 be done by companies on their privately-owned properties
5 until such time as the recovery of oil from shale is greater,
6 until there has been time for the development of a national
7 energy policy, and until the environmental problems are
8 resolved. When the answers have been found, then lease out
9 the public land. But they should be leased at a competitive
10 price and not given away.

11 That's all of my statement, but I do have another
12 one to read.

13 JUDGE RAMPTON: Yes.

14 MS. KLADDER: This is the statement of Doctor
15 Ira J. Kowal. He is a cardiologist in private practice in
16 Englewood, Colorado, a member of the Arapahoe Medical Society,
17 and co-chairman of it Environmental Committee.

18 "As a private citizen, I have all too many misgivings
19 about numerous aspects of oil shale development in Colorado.
20 However, my role today is to express, as a concerned physician,
21 my medical society's feelings about specific medical problems
22 that we foresee and which we feel have not been adequately
23 worked out to date.

24 "It will come as no surprise to this committee, I'm
25 sure, that there is a 'crisis' in medical care delivery at

1 the present time; furthermore, this crisis has never been more
2 evident than in rural America, and even that much more evident
3 in the part of Colorado that may become the site of oil shale
4 development and production.

5 "Citizens of Colorado, the United States, and the
6 world have all witnessed the plight of the people in Eagle
7 Valley, a place not dissimilar in many ways to Rifle and
8 Meeker -- in their inability to obtain and keep a physician
9 in their community.

10 "A recent study in The New England Journal of Medicine,
11 March 16, 1972, one of the most esteemed medical publications
12 in the entire world, estimated that 133 primary physicians
13 such as internists and pediatricians are necessary to care
14 for a population of 100,000 people, irrespective of the need
15 for mental, obstetrical, and dental needs, and excluding
16 considerations for routine physical examinations. This study
17 went on to show that only 59 physicians are currently available
18 per 100,000 people throughout the United States as it is.

19 "Current estimates of an influx to Rifle, Colorado,
20 alone, without consideration of other localities, of 9,500
21 new people would suggest the need for approximately 13 new
22 primary physicians in order to deliver adequate primary health
23 care. Once again, to the Rifle area alone. While no figures
24 are available, one can easily be assured that secondary expertise
25 in the way of surgeons, gynecologists, orthopedic surgeons, and

1 other specialty areas will also, to some degree, be a necessary
2 concomitant. Yet currently there are only three physicians
3 in Rifle, none of whom is a pediatrician.

4 "We ask the following questions and believe that
5 answers are necessary and almost mandatory before a large
6 project such as oil shale development production can be permitted:

7 "1. Is there a plan to meet the need for adequate
8 primary and secondary medical care?

9 "2. Will this plan stand review by knowledgeable
10 experts?

11 "3. Where, and how, will additional hospital facilities
12 be built in an already over extended and troubled situation as
13 currently exists in Rifle alone, to say nothing of other
14 similar communities?

15 "4. How can physicians be expected to set up
16 practices in an area as impermanent as this 10-year project
17 would evidently become?

18 "5. Can we condone such a project without the
19 above-mentioned prerequisites being met?

20 "In a time when health care delivery has reached
21 crisis proportions, largely because of a shortage of physicians,
22 and allied health personnel, we are now confronted by a massive
23 inroad on an already over-taxed medical community. No viable
24 solution to this problem has been suggested by the developers,
25 and past experience dictates that a solution must be advanced

1 to avert a potential medical catastrophe."

2 Thank you.

3 JUDGE RAMPTON: Thank you.

4 Our next is Bob Chancellor.

5 MR. CHANCELLOR: Ladies and gentlemen. My name is
6 Bob Chancellor. Although I headquarter in Denver, geologic
7 work carries me often to the Western Slope. I am a vice
8 president of Rio Blanco Natural Gas Company, but I'm speaking
9 here as an individual.

10 My company made detailed formal comments in Denver
11 earlier this week concerning the Draft Environmental Impact
12 Statement on oil shale. Denver is where things are done
13 formally. My personal opinion is that what went wrong with
14 this whole business the Interior Department is proposing to
15 do regarding the much-needed oil shale came about by having
16 things a little too formal. As we used to say in the Navy,
17 "Things can't be this fouled up by accident; someone had to
18 plan it this way." I don't say this is all the fault of the
19 Interior Department.

20 There is a sensible way to go about having the
21 mineral wealth of Western Colorado help solve the nation's
22 energy problems. That way is in having every useful project
23 go forward without conflict from any other. The challenge
24 of the nation's energy shortage cannot abide bleeding hearts
25 or cheap politics. We must roll up our sleeves and develop

1 a system of priorities.

2 The gist of my company's remarks in Denver concerning
3 oil shale was that we couldn't understand why the Department
4 of Interior hadn't ever let us know they wanted to start
5 mining oil shale on a block of land within which our company
6 owns 40 percent of the oil and gas leases and in an area
7 where a number of us smaller independents have been actively
8 engaged in the search for natural gas, and oil. Those of us
9 that have had the frustrating experience over many years of
10 drilling for gas in Western Colorado and running into thick
11 pay zones with a lot of gas reserves but too tight to give it
12 up know that the gas is unquestionably here. A whole bunch
13 of gas. The experts tell us that there's enough gas in the
14 Rocky Mountains to double the nation's reserves.

15 Every now and then we have run into some excellent
16 gas producibility, but too often we have been stymied by
17 little or no market for the gas. Those things are all changing.
18 Now, just when we are on the verge of solving our producing
19 and marketing problems, what happens? The Interior Department
20 comes out with a thousand-page document, printed on 50 different
21 typewriters, and all spluiced together in obvious haste. That
22 document tells us directly and by inference oil shale is the
23 only answer to all the energy problems, and that if we producers
24 of natural gas and oil get in their way, they'll run us over.
25 At the same time, they list enough uncertainties and enough

1 possible changes in the environment connected with oil shale
2 to scare any reasonable man out of his senses.

3 One of the ways of getting natural gas out of the
4 ground is by nuclear stimulation. There have been a lot of
5 opinions on the environmental impact of drilling nuclear and
6 conventional wells and nuclear wells for gas. Some of these
7 opinions apparently have made certain of the Interior Department
8 executives real nervous. It is strange that they are nervous
9 since all the government's scientific agencies who have worked
10 on this project think it is progressing safely and properly
11 in a careful series of steps.

12 Compared to the minor environmental impact of
13 conventional or nuclear stimulation for gas, the proposed
14 oil shale program could be -- understand, I did say could be --
15 something else again. With oil shale maybe we're going to
16 eventually relandscape Western Colorado -- make it like your
17 front lawn. That is, after maybe we've torn it up, filled it
18 in, smoothed it out, and maybe raised the salinity of the
19 Colorado River, and maybe allocated all the water on the
20 Western Slope to oil shale extraction for an unknown period.

21 Don't get me wrong. There's lots of maybe's here.
22 It could be that in the national interest this is necessary
23 and desirable. In the meantime, I think decision-makers in
24 the Interior Department should get back with their oil shale
25 promoting buddies and decide to keep us poor boys in the game.

1 After all, we have been and are producing much-needed natural
2 gas and producing it out of something other than a pilot plant.

3 Heaven knows, on the Western Slope we love oil shale.
4 Dreams of the coming oil shale bonanza have been Mom and apple
5 pie to us. Those dreams have also sold a lot of newspapers.
6 Maybe those dreams are going to come true -- millions --
7 billions -- trillions.

8 But don't let's put all of our eggs in that oil
9 shale basket. Don't let's kill off a gas search that's
10 coming on strong and that Government experts say could be
11 at least half as big as the oil shale might become; a gas
12 search that involves a lot of less trouble for all concerned,
13 including elk, deer, grouse, rabbits, juniper, native grasses,
14 and last but not least, the human beings on the Western Slope.
15 Human beings who want to make a living without any drastic
16 changes in the countryside unless those changes are really
17 necessary. Let's get oil shale started on private lands where
18 we can develop some economic parameters for leasing public
19 lands and eliminate any possibility of Teapot Dome claims.

20 While we're at it, let's bring some of these
21 suburban Denver so-called environmentalists to some of the
22 places out on the Western Slope where we're drilling for gas
23 and working on oil shale. Out where the jack rabbits carry
24 their lunch boxes. Let's leave them out there for a few
25 weeks to interrelate with the alkali dust and sagebrush and

1 the rattlesnakes. Let's help them to some true sense of
2 comparative values so that reasonable approaches can be taken
3 to the extraction of the hydrocarbons in Western Colorado.

4 There are a lot of men in Grand Junction who have
5 fought the hard fight in Western Colorado, searching for oil
6 and natural gas and working on oil shale. I didn't see any
7 of their names mentioned as being consulted by the Interior
8 Department executives. And I'm going to believe that what
9 happened, they got the cart before the horse. We should have
10 had and then written the Environmental Impact Statement.

11 JUDGE RAMPTON: Thank you.

12 Our next witness is Pat Halligan.

13 MR. HALLIGAN: First I think it would be appropriate
14 to commend the Department of the Interior for the high quality
15 work that went into the preparation of the Impact Statement
16 which is under consideration here today. The question before
17 us is a hard, tough one, and decisions that will ultimately
18 be reached will not please everyone. The Department has,
19 however, done a good job in alerting us to some of the problems
20 and prospects associated with oil shale development.

21 Without question, the development of oil shale will
22 have an impact on the physical environment of Western Colorado.
23 But the impact on the economic fiber will be just as strongly
24 felt. This impact will not be restricted to a relatively small
25 portion of the State of Colorado either for it will be felt

1 throughout this nation. We may have to carry the burden of
2 our actions here for a long time, so it is imperative that
3 whatever decisions are made must be right. The stakes are
4 too high for them to be otherwise.

5 Western Colorado is in the fortunate or unfortunate
6 position, depending on your point of view, of being the
7 location of some of the richest deposits of this mineral in
8 the world. However, Western Colorado is fortunate to be in
9 the location of some of the most beautiful and properus and
10 natural environment to be found anywhere. I am not here to
11 advocate nor to condemn the processing of oil shale. But the
12 question of whether or not industrial development of the
13 magnitude of projected in the Impact Statement is compatible
14 in this atmosphere must be answered.

15 Further, the question of whether the national good
16 will be served best by exploiting the resources or whether
17 the nation would be better served by leaving the area intact
18 must, too, be dealt with.

19 If the decision is made to proceed with the oil
20 shale leasing program -- or with private development, for
21 that matter -- the problems already facing city and county
22 governments in this area will be compounded. This is my
23 concern as a professional planner, and I would introduce
24 myself here now. I'm Pat Halligan, H-a-l-l-i-g-a-n, director
25 of the Oil Planning Commission. I am one who has had the

1 good fortune to be employed by three of the counties that will
2 feel the impact and burdens of development the most. Housing,
3 transportation, recreation, water resources and quality, and
4 education are just a few of the areas about which elected
5 officials are expected to make sound decisions. Taxpayers
6 expect a high quality delivery of service from government,
7 and yet delivery of service at the local level is constrained
8 by the financial resources available.

9 Therefore, if the leasing program does proceed, then
10 it seems to me that the Federal Government has an obligation
11 to consider this as a kind of impacted area and one which
12 should have a high priority as far as assistance for various
13 planning and construction grants is concerned.

14 With the influx of people into this region that oil
15 shale development would bring, the governmental institutions
16 here will need help. We will need help from both Federal and
17 State agencies, but not the mind-boggling, frustratingly
18 bureaucratic red-tape-bound kind we have been subject to in
19 the past. We have had enough of that, and it has served no
20 other purpose than to fractionalize and dilute the efforts of
21 all concerned with the development of Western Colorado.

22 Rather, aid in the form being provided for example,
23 by the cooperative efforts of the State, the Department of the
24 Interior, and the oil industry is the kind of enlightened
25 help that is and will be the most beneficial to this area.

1 Industry certainly has a role to play here as well
2 because your employees must be adequately provided for if
3 you expect top performance from them. If the leasing program
4 does not proceed, you still present us with the prospect of
5 developing your private holdings, and the impact on the area
6 will be just as great as will your obligations.

7 This has not been intended as a whining cry for
8 help to anyone, but rather a statement of fact, that if you --
9 State, Federal, industry -- are going to be part of the
10 problem, you had better be prepared to be part of the solution.
11 Do not expect miracles from elected officials who don't have
12 the financial wherewithal to make immediate decisions
13 regarding inflated demand for services as a result of the
14 occurrence of heavy industrial development unless you are
15 willing to help pay the cost.

16 JUDGE RAMPTON: Thank you, Mr. Halligan.

17 This completes the list of witnesses or participants,
18 or those who have pre-registered. We passed up two because
19 no one responded when I called their name. I will now call
20 them again. Is there anyone here who represents the Aspen
21 Wilderness Workshop? (No response.)

22 JUDGE RAMPTON: Anyone from the Environmental
23 Task Force, Aspen, Colorado? (No response.)

24 JUDGE RAMPTON: Is there anyone who has not
25 registered who wishes to make a statement at this time?

1 Would you step forward? State your name and who you are
2 associated with, please?

3 MR. ROADIFER: Members of the panel. My name is
4 Jack Roadifer, R-o-a-d-i-f-e-r. I do not represent any
5 group or organization or company, but simply myself.

6 I'm appearing here today because I'm a concerned
7 resident of Western Colorado, and I think more residents of
8 Western Colorado should be concerned about this program that
9 is being studied.

10 I would like first of all to say that I share the
11 opinions expressed earlier today, that the availability of
12 the Environmental Impact Statement and the time allowed is
13 not sufficient for the average citizen who does not have the
14 time to sit down with some other people involved in the
15 company, perhaps, to make an evaluation of this kind of a
16 volume -- a three-volume statement of this sort. A week or
17 ten days allowed for that is simply not enough time.

18 However, in looking over this particular Volume III
19 of this Statement in which I looked at the most, I feel that
20 I would like to direct a few remarks to that part of the
21 statement. And having a Ph.D in geology, I think I am somewhat
22 qualified to remark on some of the statements that are in
23 that document.

24 First of all, I think that there are many uncertainties
25 that still exist in this program as outlined, particularly in

19 regard to some things that I think are very important parts
2 of the program. That is availability of water. Several
3 places in the section dealing with impact on water in Volume
4 III there are statements made to the effect that it really
5 isn't known where the water will come from. Whether or not
6 the water that is saline that may be recovered from the
7 de-watering process of open pit mine, for example -- it's not
8 known if this can be used in the process to help dispose of
9 spent shale, or whether it can be used in other parts of the
10 process.

11 It seems to me things like this should be investigated
12 further before this kind of full-scale program is developed.

13 It also is stated in the same section that there
14 simply isn't enough data available at the present time to
15 predict the amounts or types of material that may be leached
16 from this spent shale by ground water. It seems to me this
17 is another thing that should be investigated further before
18 any kind of a full-scale program is developed.

19 There are other inadequacies I think that exist in
20 the Statement as far as the water program -- the waterpart
21 of the program is concerned. I further don't think that a
22 realistic evaluation has been made of the problem of disposing
23 of this spent shale. We see in the impact statement several
24 plans and discussions of disposing of the spent shale in
25 several canyons in the area, particularly dealing with the

1 one tract designated as Tract CA, the three or four canyons
2 east of the Douglas Pass road, which supposedly would be
3 filled in with this spent material. And we all know that this
4 material is going to be very errodible. And I don't think
5 this has adequately been discussed in the Impact Statement, of
6 how this problem is going to be dealt with or this spent shale
7 is going to end up eventually.

8 I think it doesn't take too much imagination to
9 visualize this 60,000 tons per day of shale that has to be
10 disposed of from one 50-thousand barrels site ending up in
11 the White River, the Colorado River -- eventually perhaps,
12 to another monument to an engineer, Lake Powell.

13 In the 30-year period we're talking about, 484
14 cubic yards of processes shale. Those figures simply don't
15 mean much to me. They just boggle my imagination. I can't
16 appreciate the amount of material involved there, frankly.
17 I wonder if anybody else can.

18 In addition to that, we're talking about 256 cubic
19 yards of overburden removed from this particular site if the
20 open pit operation is used. Another figure that doesn't mean
21 much unless we're used to talking about Federal deficits of
22 Federal budgets. I can't appreciate such figures.

23 We all know we're talking here about steep gradings
24 in these canyons. The streams -- these are dry canyons,
25 admittedly except after a rain, of course. But the water that

1 does come down these canyons after the occasional heavy
2 rain comes down these canyons with a pretty steep gradient
3 and I think it's going to be pretty difficult to hold the
4 materials in the canyons.

5 We're also talking here about perhaps a 20-to
6 30 year period before revegetation becomes effective. Revege-
7 tation has been accomplished on small tracts of spent shale
8 materials. Perhaps it can be accomplished on large tracts.
9 We are looking at fuel material that is simply miles long.
10 But I don't think this has been fully evaluated, either.

11 Another part of the Impact Statement dealing with
12 the impact on air. The statement is made that 57 to 85 tons
13 per day of sulphur, 21 tons per day of nitrogen dioxide and
14 perhaps 40 tons per day of dust may be admitted from each
15 mining surface complex. Well, this is only one side. If we
16 have a full-scale development, we're talking about maybe 10
17 sites. We can multiply the numbers by ten.

18 It further says that the impact investigation on
19 emissions has yet to be established. Well, for a person who
20 lives here in Western Colorado, I think these are things that
21 we should certainly be wondering about, at least. What impact
22 is all this air pollution going to have? What impact from
23 the silt and stuff getting into the river is going to have?
24 And I don't think the questions have been answered very
25 satisfactorily.

1 I further think that strip mining or open pit
2 mining, whichever term is preferred, should be discouraged
3 in spite of the scenic vista that might be created by such
4 an operation. We all know from experience in the other
5 parts of the country, in Appalachia, particularly, that
6 strip mining creates an area that is very difficult to
7 revegetate, very difficult to bring back to any kind of a
8 situation even approximately what it was before. We're
9 talking about an arid region where it is even more difficult.

10 Well, in effect, I could sum up by saying that I
11 think if an oil shale program of this magnitude is developed
12 that I hope that very strict controls are exercised over this
13 program, and I hope that there's authority available to
14 somebody to shut down an operation that does not control
15 emissions, that does not comply with the standards that are
16 set up. But we all know how difficult it is to stop something
17 like this that gets started. Such as the Four Corners power
18 plant where we were assured before that started that there
19 wouldn't be any significant air pollution. A person becomes
20 a little bit suspicious of the assurance after a while.

21 We were also assured that there wouldn't be any
22 significant effects from uranium plant tailings, but now we
23 don't know whether there are or not.

24 Perhaps a prototype program of this type is the
25 only way to evaluate the factors. Perhaps there's no other

1 way of telling what the effects will be of some of the things
2 until a prototype program is started. But once a program like
3 this is started with the ensuing jobs -- the people are
4 brought in and the money is brought in and so forth -- it's
5 very difficult to end a program like that regardless of the
6 effects from it.

7 Thank you.

8 JUDGE RAMPTON: Thank you, Mr. Roadifer.

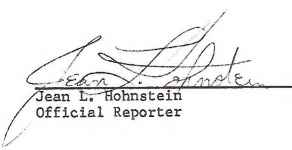
9 Is there anyone else who has a statement? If there
10 is none, then I'd like to thank you again for myself and for
11 the panel for your courtesy, for your attentiveness, and for
12 the time and effort you put in to prepare these statements.

13 And I declare this session closed.

14 (Whereupon, at 1:30 o'clock p.m., the hearing in
15 the above-entitled matter was adjourned.)
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REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the Department of the Interior in the matter of: DRAFT ENVIRONMENTAL STATEMENT FOR THE PROTOTYPE OIL SHALE LEASING PROGRAM, at Grand Junction, Colorado, Friday, October 13, 1972, was held as herein appears, and that this is the original transcript thereof for the file of the Department.



Jean L. Hohnstein
Official Reporter



Form 1279-3
June 1983)

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